The American Cinematographer

FEBRUARY 1933

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AMERICAN CINEMATOGRAPHER

A Technical and Educational publication of motion picture photography

Published monthly by the AMERICAN SOCIETY OF CINEMATOGRAPHERS, INC., Suite 1222 Guaranty Building, Hollywood, California

Telephone Granite 4274

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GEORGE SCHNEIDERMAN, Treasurer, A. S. C.

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ESTABLISHED 1918 Advertising Rates on application Subscription U. S. $3.00 a year, Canada $3.50 a year, Foreign $4.00 a year, single copies 25c
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HOW TO WIN A *Personal Movie Contest*

WINNERS

FIRST PRIZE . . . . William A. Palmer and Ernest W. Page, Palo Alto, Calif., for "Tarzan Jr." 3 reels. — **100% FILMO MADE**

SECOND PRIZE . . . . Tatsuichi Okamoto, Matsuyama, Japan, for "Lullaby." 1 reel. — **50% FILMO MADE**

THIRD PRIZE . . . . S. W. Childs, Jr., New York City, for "I'd Be Delighted To!" 1 reel. — **100% FILMO MADE**

From December American Cinematographer

First Prize winners Page (left) and Palmer, on location with their Filmo Camera. In writing to name a Filmo 70-DA Camera as their Bell & Howell added prize, Mr. Palmer said, "The Filmo Camera was undoubtedly a great aid in filming 'Tarzan, Jr.'. It allows double and triple exposures to be made with the success that is usually expected only of 35mm studio cameras."

S. W. Childs, Jr., placing his B & H prize, a Cooke 1-inch F1.5 lens, on his Filmo Camera. He said that, in shots of the kind which compose his prize winning film, "you have to be sure that 'what you see, you get', and adds, 'my Filmo certainly imparts that confidence'."

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THE AMERICAN SOCIETY OF CINEMATOGRAPHERS was founded in 1918 for the purpose of bringing into closer confederation and cooperation all those leaders in the cinematographic art and science whose aim is and ever will be to strive for pre-eminence in artistic perfection and technical mastery of this art and science Its purpose is to further the artistic and scientific advancement of the cinema and its allied crafts through unceasing research and experimentation as well as through bringing the artists and the scientists of cinematography into more intimate fellowship. To this end, its membership is composed of the outstanding cinematographers of the world, with Associate and Honorary memberships bestowed upon those who, though not active cinematographers, are engaged none the less in kindred pursuits, and who have, by their achievements, contributed outstandingly to the progress of cinematography as an Art or as a Science To further these lofty aims, and to fittingly chronicle the progress of cinematography, the Society's publication, The American Cinematographer, is dedicated

●

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ELMAR f 3.5 lens with Valoy ENLARGER

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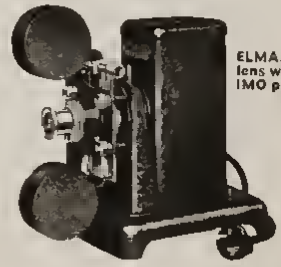
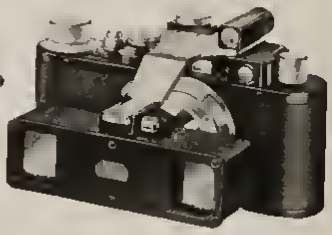


ELMAR f 3.5 lens with UD-IMO projector

ELMAR f 3.5 lens and LEICA camera with Stereo Attachment



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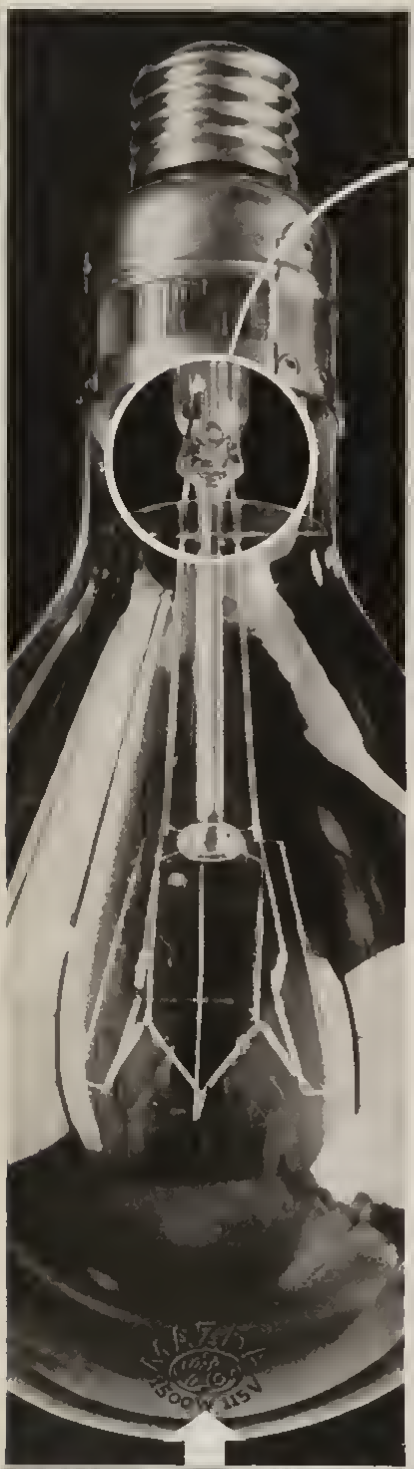

This is the heart of a BATTLE GROUND

● "Hit 'em!" Light floods the set; the lamps grow hot; and inside the bulbs, the struggle between temperature and glass and metal begins.

For temperature changes make glass and metal expand or contract; and in the stem of every lamp bulb, glass is fused about the metal lead wires to form a seal that *must* be constant if the lamp is to operate. Obviously then, the glass and metal in the stem of a lamp bulb must move hand in hand at every temperature; and in addition, the metal must be capable of being "wetted" by the glass so that a close seal may result.

No metal exactly fulfills these requirements. Platinum comes nearest to it and was first used to meet the temperature attack. But platinum became steadily more expensive to use. Another weapon had to be found. General Electric scientists re-entered the fight; they made hundreds of tests and experiments; and finally they developed a new wire, made up of two metals, one brazed about the other as a sheath. This combination wire, called "Dumet", proved to be not only lower in cost; it resulted in a much lower percentage of leaky lamps, and thus brought about a double saving to you.

"Dumet" may not be the final step in this battle, but it is typical of the development work constantly being carried on by General Electric engineers and scientists. And this research and development is one of the reasons why you always find the highest quality in G. E. MAZDA lamps. That motion picture studios all over the country recognize this is shown by one fact: More and more, they are using G. E. MAZDA lamps for all their lighting purposes, from "set" lighting to special "process" shots. General Electric Company, Nela Park, Cleveland, O.

GENERAL ELECTRIC

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First of A. S. C. Tests on Equipment Published Next Month

● **When the above insignia appears on a piece of photographic equipment or in the advertisement of a manufacturer it means that that particular article has been thoroughly tested by the American Society of Cinematographers, "The Camera Masters of the World," and approved by that organization as living up to the claims made by the manufacturer of that article and can be purchased with confidence that it lives up to those claims.**

THE program of testing cinematic equipment and methods announced some months ago by the American Society of Cinematographers is now actively under way with committees working directly under John Arnold, president of the society

It is planned to announce the results of the first tests in the March issue of the American Cinematographer The equipment now under the scrutiny of the committee is in the 16 mm. field

The appointment of committees, the arranging of proper methods and places for the testing of equipment, the securing of instruments and other things necessary to properly scrutinize and try-out the many things used in the making of motion pictures has occupied the intervening time of the society in their preparation for this important work

While the entire preliminary work for testing of all pieces of equipment has not been completed, sufficient for the testing of several particular types has been gathered so that the work can be started and carried on for several months, at which time all arrangements will have been carried out

As previously announced this testing service will be based primarily on the claims of the manufacturer as to what his particular piece of equipment will do The claims as to its value in comparison to competing articles of the same manufacture will naturally not be considered, as it is not the intention of the American Society of Cinematographers to render this service so as to establish one manufacturer's goods over another's, but to make it possible for the buyer to purchase equipment he needs in his work with confidence and with the knowledge that it will perform according to the claims of the manufacturer who is responsible for it.

The claims as set forth by the manufacturer will be made a part of the report in this paper when the article is given the official approval of the society. The purchaser can always demand the privilege of reading those claims and the remarks of the committee in relation to the claims as determined by their tests of the instrument in question.

The testing and approving gives the manufacturer who submits his article to the American Society of Cinematographers, the privilege of using on that article the approved label as it appears in connection with the report of that article in the American Cinematographer

This will take the form of the insignia of the American Society of Cinematographers with the word APPROVED written across it in large letters followed by the name of the society.

The manufacturer not only has the privilege of using this on the article itself, but also may include it in his advertising, so that the purchaser is familiar with the fact that it has been approved when he decides to make his purchase

The Amateur field was decided upon by the Society to be the scene of their first activity as the many hundreds of letters coming from the amateur after this plan was announced evidenced a keen interest in this testing plan Furthermore, the amateur does not possess the technical knowledge of cinematic equipment that is known to the professional, and it was felt that as a first step the greatest service to the greatest number would be to concentrate during the first cycle of testing on equipment in the Amateur field.

Using The Mitchell

Under some conditions, the new camera may be used without a cover less than a yard from the microphone.

SOME months ago, officials of the Mitchell Camera Corporation demonstrated before a meeting of the American Society of Cinematographers a new studio camera, in which great strides were made toward the industry's goal of the truly noiseless cine camera At that time, Mr George Mitchell, its designer, stated that although he did not claim his camera to be the ultimate, perfectly soundless camera, he did feel that it was a great step in advance, since it was a very appreciable step toward that goal and also the first camera to be designed and built specifically for sound-film cinematography Since then, the design has been refined in many details, and both the convenience and the silence of operation have been considerably improved

The writer has been fortunate in being privileged to use one of these new cameras for the major part of the photographic work on his current production for Metro-Goldwyn-Mayer, "Hell Below," which is being made under the direction of Jack Conway While this test has not been in any way connected with the testing program of the A S C Research Committee, it has been none the less gruelling, for the camera was used, not as an extra camera, or as an object for a single test, but as the regular production camera for over 90 percent of a very difficult picture The result may best be summarized by the statement that in the unanimous opinion of the writer, the director, the operative cinematographers and the sound staff, the production (in the form in which it was actually staged) absolutely could not have been made without this noiseless camera The conditions encountered ranged from the studio stages to location-work on submarines and destroyers at sea; a large majority of the set-ups would have been absolutely impossible with the heavy, bulky "blimps" and "bungalows" commonly used, while the amount of dialog to be recorded precluded the use of ordinary "silenced" cameras even with blanket coverings Furthermore the light weight and small bulk of the noiseless camera expedited production markedly.

The construction of the new camera does not differ materially from that of the original model described in the AMERICAN CINEMATOGRAPHER for July, 1931, by William Stull, A S C A number of refinements have, however, been added since then Aside from certain changes in the design and manufacture of the internal gearing, the most important is in the means taken to control and eliminate film-slap, which was found to be the source of a great part of the noise remaining in the original model. This is done by means of a series of idling rollers through which the film passes these control the loops, and minimize the noise inherent in an intermittent design

Equal in importance is the 48-cycle synchronous motor used to drive the camera This motor was developed by John Arnold, A S C It is absolutely noiseless, and practically vibrationless In his description of the original model of this camera, Mr. Stull commented on the fact that the greatest stumbling-block had been the securing of adequately silent motors, especially since the motors usually used with the various sound systems had been designed for use with silencing devices such as blimps or booths, and were in no way silent In addition, such motors generally operated through reduction-gearing, which added to the noise The new 48-cycle motor developed by Mr Arnold, however, is absolutely noiseless Together with the new camera, it marks the greatest forward step in many years

As in the original model, the camera case is thoroughly insulated by the insertion of a layer of cork between the inner and outer walls The magazines are treated in the same way, and further insulated from metallic contact with the camera-head Similar insulation is used between the camera and the tripod-head

The new camera has practically all of the conveniences familiar before the advent of sound a four-lens turret, adjustable shutter, which may be adjusted between 0 degrees and 170 degrees while the camera is in motion; a manually-operated dissolve with a positive indicator at the rear of the camera; and many similar refinements Since the camera requires no bulky blimp or other silencing device, it does not need the cumbersome tripods and rolling tripods used for the 500-lb. "bungalows," but may be used with any tripod adequate for studio use before the addition of sound

In practical operation, the Mitchell Noiseless Camera brings the general technique of camerawork back to what it was in the days of silent pictures—light weight, uncovered cameras, with all the flexibility and celerity of operation that any cinematographer could desire In so far as its silence is concerned, practical experience has demonstrated that for all exterior work—including scenes made on covered sets where the sound-waves have an opportunity to dissipate rather than reverberate—the camera may be used entirely uncovered except for very close work With an ordinary blanket covering the camera may in such instances be used within but two or three feet of the microphone It may also be used with little or no covering for most work on closed stages except extreme closeups, such as occur in love-sequences, where both camera and microphone work extremely close to the player, and in which the dialog is read at extremely low voice-levels, making necessary abnormal amplification of the sound

The elimination of the heavy, bulky "blimps" and "bungalows" naturally results in vastly quicker production and incidentally in greater efficiency and economy, as a

Noiseless Camera on Production

by

Hal Rosson, A.S.C.,

Member of Research Committee
American Society of Cinematographers

special staff of stage-hands does not have to stand by to assist in moving the heavy camera-housing from one setup to the other, or to shift it from one tripod to another. This naturally conserves a considerable amount of time, and on the average permits a company to work at least 30 percent faster than could be possible under the conditions now regarded as normal.

From the sound-man's viewpoint, the camera is also an important improvement, according to Ralph Shugart, the recording engineer in charge of "Hell Below." He says, "Unquestionably, this new noiseless camera has helped me in my work. While it is by no means the 100 percent silent camera that all of us dream about, it is none the less the greatest step toward it that has yet been taken. It is certainly quiet enough so that it can be used uncovered or with only a light blanket, in practically everything except extreme closeups. Of course, no fixed rule can be laid down for such a thing, as acoustical conditions differ infinitely, and what may be entirely satisfactory at one time may be entirely unsuitable at another; the general conditions surrounding the set or location, the characteristics of the area, the stage, and even the set itself change with each set-up. So, too, do the requirements of each scene, for while the action, dialog and background-noise in one scene might permit a certain amount of camera-noise in the record, the next—a highly dramatic scene or an intimate, close-up love-scene, for instance—might preclude any suggestion of camera or other sound. Nevertheless, this new camera is sufficiently silent so that it is extremely welcome to the sound-men.

"But I cannot stress too highly the fact that it was a development from our own studio that has actually made this new camera a practical thing. This development is Mr. Arnold's new 48-cycle synchronous motor. It is absolutely noiseless. Were the new camera to be used without this motor, it would be worthless, for while the camera itself is quiet enough, the ordinary sound-system motors are not.

Continued on Page 37

Hal Rosson, A.S.C., (right) and Director Jack Conway discussing the new Noiseless Mitchell. Mr. Conway is indicating the new idling rollers which eliminate the film-slap.

TREND of the TIMES

● AT THE Paramount studios, they have worked out a plan, a mighty good plan, the sort of thing that should be in operation at every studio "for the good of the production"

It's simple and common-sense. It's just this. Before the sets are painted, before the gowns are made for the actresses, the cameraman is called in on the consultation as to the color.

Color and light are two strongly influencing factors in photography. The cameraman has been in charge of the lights ... the electrical crew on the set is under him, but he has had nothing to say about the color the sets were to be painted or the color of the gowns and costumes.

To secure the right harmony, color is important as it influences the shadings and contrasts. The cameraman knows just how color will photograph, what each color will give him in connection with another color.

Regardless of how pleasing the color may be to the eye, how beautiful a certain colored gown may appear on an actress the final answer is its value in the picture and its contrasting or harmonizing possibilities with the surrounding sets.

Before sets are painted, before gowns and costumes are made, the head of the camera department should be consulted for the good of the production.

● BY NOW the entire world knows that Clyde deVinna, A S C, is an amateur radio enthusiast. They are familiar with the fact that he knows his short waves like he knows his photography and that he has been hibernating up in Alaska working on a picture for MGM.

His recent close call with death from monoxide gas thrown off from a gasoline heater and his being saved through the co-operation of another amateur in New Zealand with whom he was chatting when his signals became weaker and then finally ceased for no reason, was sensational news. The New Zealand operator frantically clicked his keys until he raised another operator in Carmel, California. This operator is turn stuck to the job until he raised an amateur in the same town in which deVinna was located. This amateur rushed over and discovered deVinna just in time to bring him back from the effects of the deadly fumes.

However, now that it is all over and Clyde is still with us we can look upon the occurrence in a happier mood and as some of the wits of Hollywood boulevard remark, they cannot understand how Clyde could permit a bit of monoxide gas to overcome him when he has been facing supervisors for so many years.

● THE trend is strong toward silent cameras. Last month we announced details of the DeBrie camera which is in use in Europe. In this issue we give the details of the silent camera worked out jointly by the Mitchell Camera Company and the Metro Goldwyn Mayer studios. Now that the "blimp," "bungalow" and other contraptions that have been used for silencing purposes seem to be on their way to limbo another important history in motion picture mechanics is being written.

● SCIENTIFIC genius has again raised its head above the studio turmoil in the announcement that Dr. E. M. Dietrich, A S C, has developed a new and more economical method for process work in motion pictures. While we do not know the details of Dr. Dietrich's method, a complete description of its operation will be published in an early issue of The American Cinematographer.

● IN THE great striving for economy we sometimes wonder why some of the great Hollywood studios feed the maws of the incinerators the thousands and thousands of dollars worth of lumber each year they do. It is the practice of these studios to get rid of the sets no longer serviceable by burning them. And in the building trade many wreckers of old houses have paid for the privilege of wrecking the buildings for the material they could salvage. Surely someone in Hollywood is overlooking the possibilities of the money in this by-product.

Clyde deVinna, A S C, whose life was saved in Alaska by the quick work of an amateur broadcaster in New Zealand.

Problems of Recording Music

by

David Mendoza*

of Warner Bros

SUMMARY The paper opens with a few remarks on the relation between the musician and the engineer and refers particularly to certain inadequacies in the recording and reproduction of music The improper acoustical construction of sets and the inappropriate placing of artists and accompanists are alluded to The difficulty of satisfactorily recording background music is briefly discussed and a suggestion is made for overcoming the masking of dialog by background music Further remarks are made on the size of sets and various points of technic in recording and duping

IN DISCUSSING the practical problems that confront us in the every-day experiences on the stages of the studio, let us first disregard entirely the attitude of the industry as a whole—disheartening, to say the least—toward all endeavors of pioneering into new realms of imagination and fantasy I believe that you will agree that unless startling improvements are made in the recording and reproducing of sound pictures, even beyond what has been done up to now, the industry may see a further divorcement between the theatre and the audience than it has already seen

The musician feels a common bond with the engineer, in respect to the reproduction of sound, first, because as an artist he depends so much upon the indulgence of the engineer and, second, because he is keenly aware of the well-nigh overwhelming technical problems I have found the great majority of "mixers" I have worked with to be most genial and sympathetic, and have sometimes been amazed at the appreciation shown by these men, not only of sound as spoken of in decibels, but as regards a fine feeling for music in all its components of inspirational value—the balance of orchestration and the most illusive emotional factors that comprise an artistic performance

Many present-day troubles result from two factors (1) a lack of understanding of the other fellow's problem, and (2) the yet unconscious and unexpressed opinions of our audiences at large as to their reactions to "sound"

I feel that our stages are sorely lacking as to physical proportions and proper material for the effective recording of music The stacking of deadening and in many instances reflective sets is most harmful Our orchestras are shunted into all manner of positions and locations so as to be out of the way, as it were, of camera lines, and to be "conveniently" placed Soloists are usually placed at absurd distances from the accompanists Under such conditions, balancing for the mixer becomes merely a catch-as-catch-can affair. Even on the coast, with the stupendous stages found on all the lots, the sets are generally built with a thought only for the cameras

Another factor that results from a lack of cooperation and understanding between departments refers to the matter of orchestration The mixer generally hears the first performance of the musical compositions in his monitor room, and is not generally aware of some of the niceties of the orchestration, which should be determined by the playback

A few weeks ago we had occasion to place the orchestra on a platform about four feet high, which happened to be built for use as a bridge in a scene to be shot the next day By placing the orchestra on this platform, with its good air space beneath and all the "life" resulting from the platform, we were afforded one of the most satisfactory recordings obtained in a long time This is a point upon which I put a great deal of stress, for orchestras are expensive and unless we obtain satisfactory results the efforts and expenditure involved will have been greatly vitiated

Now we come to one of the most deplorable facts in connection with music in motion pictures, namely, "background" music Of course, where a picture is silent as far as dialog is concerned, the music has a pretty good chance to come through satisfactorily, but when the characters on the screen speak, the music is wholly ineffective and in any case unsatisfactory If we were to have an orchestra in the theatre to supply mood and background music for pictures, the music should emanate from a source entirely different from that from which the dialog would come It would be easy to "balance" the music and dialog, and lose none of the effectiveness of either one or the other Would it not be possible to develop a double sound track, one on each side of the film, and place the projecting horns at different places in the proscenium of the theatre? One track could carry the music and the other the dialog, the two tracks could be reproduced on different systems and each could be operated independently of the other and reproduced from

Continued on Page 30

* Reprinted from January issue of Journal of Society of Motion Picture Engineers

PHOTOGRAPHY of the MONTH

"CAVALCADE"
photographed by **Ernest Palmer, A.S.C.**

Here again is a photographed stage-play a production which belongs more truly to the writers, players and director than to the cinematographer Nevertheless, Palmer has done supremely fine work, for his photography is perfectly keyed to the mood of the production in every scene, so perfectly, in fact, that the average observer will probably ask himself "was there any photography at all, or did I really live these experiences?"

The adaptation of Noel Coward's play is, dramatically speaking, a curious mixture of stage and screen artifice here a sequence is carried largely by the artifices of the stage—as in the episode of Queen Victoria's funeral—and here is one carried by the artifices peculiar to the screen—as is the epsiode of the sinking of the "Titanic," in which the whole story is told by a simple trucking-shot to a close-up of a life-preserver

The war sequence, executed under the direction of William Cameron Menzies, is a remarkable example of the understanding utilization of the dramatic potentialities of the camera The progress of the war is graphically depicted by means of a series of optically-printed multiple-exposure scenes which actually involved a negligible expenditure The sole criticism of these scenes, which serve as important transitions, is that they are too long, and that they are perhaps a trifle too modernistic in conception to jibe well with the simplicity of the rest of the production The optical montage treatment at the climax of the production is interesting, effective, and thoroughly in keeping with the mood of that part of the film William Darling and Earl Luick deserve the greatest credit for their achievements in creating the settings and costumes, respectively, for this exacting production The entire film, in a word, is one which reflects the greatest credit upon the Fox organization as a whole, and upon everyone connected with the production individually It is a film which demonstrates the possibilities of the cinema if real enthusiasm and cooperation can be inspired in every department, and maintained intact from start to finish Everyone in any way connected with the motion picture industry, or interested in the cinema, should see "Cavalcade," not once, but many times

"TONIGHT IS OURS"
photographed by **Karl Struss, A.S.C**

A photographed stage-play seldom gives unusual opportunities to the cinematographer, this one is no exception to the rule, but Karl Struss has nevertheless made excellent use of what opportunities were his The production is a fine example of the perfected photographic technique attained by the greater masters of the cinematograph today, the compositions are above average throughout, the lighting natural, and exceedingly skillful, and the general mechanics of a high order There are a number of very interesting effect-lighted scenes in the film, and some of the closeups of Claudette Colbert are surpassing examples of the best type of modern cinematographic portraiture

"NO OTHER WOMAN"
photographed by **Edward Cronjager**

This is one of those productions in which the cinematographer was obviously striving against difficulties for a definite artistic goal, and was prevented by those difficulties from achieving all that he had visualized Nevertheless, Cronjager has given us some excellent cinematography throughout the picture, climaxed by some unusually fine effect-lightings in the earlier sequences These—there are both exteriors and interiors—represent the nocturnal aspect of the district immediately adjacent to the Pittsburgh steel mills the incessant, flickering light of the huge blast furnaces and converters give the cinematographer something with which to paint a background of more than ordinary effectiveness

"STATE FAIR"
photographed by **Hal Mohr, A.S.C.**

This production is in its own right a beautiful example of the finer type of modern dramatic cinematography—but it is especially noteworthy as being perhaps the finest example of the utility and artistic flexibility of modern process cinematography yet released At least 65 percent of the footage of "State Fair" has been made with the transparency-projection process, yet throughout it all Hal Mohr has maintained the same fine quality of feeling, of dramatic mood and lighting that he has used in the normally-made sequences This is a really important achievement, for most process cinematography heretofore has been in isolated scenes or, at most, brief sequences, wherein the lighting was matched as closely as possible (this has at times been none too close!) to that of the surrounding, normally-staged scenes In this case, the problem was different not merely to match, more or less accurately, the mood and technique of more important and lengthy scenes with which the process shots were to be intercut, but to create and maintain a dramatic mood in process sequences which perforce formed a major part of the production It is a tribute alike to Mohr's artistry and to the flexibility of the projection process Moreover, the use of this process undeniably saved the Fox Company a vast deal of expense and difficulty, for it enabled them to utilize authentic backgrounds of a big middle-western state fair without the almost impossible task of filming an important production, with a tremendously expensive cast, two thousand miles away from the studio, and in the midst of a vast and supremely curious crowd Moreover, the photographic quality is far better in every respect than could have been possible under such conditions; and in spite of the difficulties of working so much under the restrictions of process cinematography, none of the players have ever been photographed to better advantage

One must also mention the ingenious conception of one sequence played in Sally Eilers' bedroom in this (it is a night-effect sequence) the dramatic action is forwarded solely by the dialog of two unseen players, and the visual portion of the picture consists entirely of highly pictorial shots of the walls and ceiling of the room, broadly patterned with the light and shadows cast by the street-lamp outside

Victor Milner, A.S.C.

"Miscasting" The Cinematographer

by

Victor Milner, A.S.C.

TO MACK Sennett, a man throwing a custard-pie can often be a pivotal point of a picture, a vital factor always To Ernst Lubitsch or Rouben Mamoulian, he is merely a man throwing a custard-pie Sennett would be completely out of his element were he to attempt the direction of a dramatic film like "The Man I Killed" or "The Song of Songs"; Lubitsch or Mamoulian would be equally out of place if assigned to direct slapstick comedy.

The producers recognize this They recognize that a director is not merely a skilled workman, an animated automaton, but a creative artist who works efficiently only when doing that type of work to which he feels suited—on assignments which arouse both his confidence and his enthusiasm Very frequently indeed, a producer will relieve a director of an assignment which does not arouse his enthusiasm rather than imperil the success of the picture by forcing the issue

It is the same with writers and artists under the present conditions—economic and otherwise—of the industry, it is doubly vital that every creative artist participating in the production of a motion picture be enthusiastic about the project in hand, and about his individual part in particular

But the producers are overlooking one vital factor in this: the cinematographer Upon him devolves the responsibility for transferring the work of all the others into tangible form—of capturing action, plot and setting upon the tiny strip of celluloid which is finally exhibited in the world's theatres This requires more than mere skilled craftsmanship: it requires creative artistry in no smaller measure than is required by direction, writing or acting For the cinematographer in charge of the photography of a dramatic production cannot be content to make a mere commercial record of what is enacted before his lens, he must capture the dramatic mood of each scene just as surely as must director and players He must bring to the eyes of the audience the visual effects of tone, form, motion and chiaroscuro which will best heighten the emotional effects sought by the director, and which will make them most receptive to these emotions.

Granted, then, that the cinematographer, too, is a highly creative artist, it must follow that he, no less than the other creative minds concerned in the production of a film must feel suited to the requirements of the task in hand; that he must be equally filled with confidence and enthusiasm for the picture and for his part in its realization.

Yet how are the majority of photographic assignments made? Is the individual camera-artist consulted as to whether or not he feels that he fits into the picture? Not once in a thousand times! The studio has, as a rule, a certain number of cinematographers under contract, when a given picture is ready for production, one or two of these men may be available—or perhaps the studio can "borrow" a man from some other film's contract list In any event, the handiest man is called, and told (not asked) "You will start such-and-such a picture tomorrow" He may or may not be given an opportunity to acquaint himself with the story, and with the director's conception of what the picture should eventually be Whatever may be the case, he is chosen practically at random, simply because he is available, with little or no regard for his artistic and psychological fitness or unfitness for the assignment

I will admit that there is a certain amount of commercial logic in this procedure in so far as it keeps the studio's contract personnel working more or less constantly, and eliminates the expense of delaying production until a suitable man may be available but in the long run, is not this being "penny-wise and pound-foolish"? The cinematographer's contribution to the realization of a picture is of as great importance as the contribution of the director, players, writers or unit-manager He—and he only—can bring things to the screen as they have been visualized by the scenarist and director, he only can attune the visual mood of the picture to the dramatic mood of the story; he only can assure that the players are photographed to their best advantage, and that the expensive settings appear properly on the screen He, moreover, can make or break the morale—and the ultimate efficiency—of a production unit: he can make it a smooth-running machine or an inefficient, inharmonious mob of individuals

Obviously, every cinematographer worthy of his salt will instinctively strive to do his best on every assignment; but he cannot completely succeed in doing so when the picture is one in which he does not feel some measure of personal confidence and enthusiasm, or when the individual psychological factors governing his relations with the director, players and other personnel of the unit are not conducive to harmonious, efficient work. The cinematographer is, fortunately, far from being a temperamental

Continued on Page 36

RIDDLE ME THIS

Cooperation between the cinematographer and the laboratory is undeniably vital to the success—artistic, technical and economic—of the visual phases of a production. How, therefore, can this cooperation be furthered?

HENRY SHARP, A.S.C. 'Cooperation between the cinematographer on the set and the laboratory which processes his film is unquestionably desirable We have, moreover, made a great deal of progress in this direction within the past few years the cinematographer no longer feels that the laboratory man is trying to give him the blame for the laboratory's shortcomings, nor does he himself use the laboratory as an invariable alibi, conditions have reached the point where each knows that the other must inevitably be a competent workman During the past year I have worked with a number of different major and independent producers, whose work was done by a number of different laboratories, both studio-owned and commercial and I have found that so long as I did my own work well, I had nothing to fear from the laboratory To my mind, the answer to the question is that the most necessary things are closer personal contact between the cinematographer and the laboratory, and a more conscious effort for consistency on the part of both If I know within very close limits what to expect from the laboratory, I can usually manage to suit my work to their requirements; if they know within equally close limits what to expect in the film I send them, they, too, can adapt their procedure But if either of us is constantly shifting, neither of us can hope to turn out a creditable job As long as both of us remain constant, neither has anything to fear"

FRED GAGE, A.S.C., Superintendent, Warner Bros.-First National Studio Laboratory 'To my mind, the key to the situation is personal contact No matter how perfect a laboratory may be, or how capable the cinematographer, both are essentially human machines And the human element demands personal contact Tests, machine-development, densitometry and every other scientific, mechanical and routine safeguard that mind can devise cannot be infallible, they help, but they cannot take the place of personal contact Even under today's curtailed production-schedules, the first cinematographer can almost always find some moment during the day to drop into the laboratory to see that we understand what he is trying to do on the set, and the busiest laboratory-men can always find time to discuss their problems with the men who expose the negative The vital thing is for both to do it! If the two will cooperate in this way, they will find that together, they can master any difficulty"

GEORCE FOLSEY, A S.C. To my mind the most important thing is real mutual confidence If I have confidence in the laboratory that is handling my negative, I feel free to go ahead and do things that I would not dare to do if I felt that the laboratory and its personnel were not competent, if they can feel that I, too, am a capable workman, their work is also lightened Each of us feels free to do our best work, without any shadow of doubt that the other will spoil it

"Such confidence and cooperation is by no means Utopian It actually exists in many cases today It was not so, by any means, in the past, I recall one instance, some years ago, where such confidence and its resultant cooperation existed, in an Eastern laboratory Following a change of management, the men in the vital positions of the laboratory were replaced with men who may have been competent but in whose judgment none of the cinematographers felt confident As a result, the work of every cinematographer using that laboratory deteriorated rapidly not so much, I believe, from any definite fault of the laboratory personnel, but because the confidence of the cinematographers was gone One felt impelled to work conservatively, to always leave a margin for the bad judgment of the laboratory men, to produce a commercial lighting, a commercial negative, rather than the best one was capable of producing

"Since I have been working on the Pacific Coast, I have been amazed at the perfect relations applying in many cases between the cinematographers and the laboratory men. Not only are both experts in the truest sense of the word, but each trusts and respects the ability of the other If one of these laboratory men tell me I am wrong, I know that I am; and I know that they understand my problems and my aims If I fail when working with such men, I have only myself to blame when I succeed, it is due in a great measure to the fact that there existed perfect confidence and perfect cooperation between myself and my laboratory"

GEORGE CRANE, Consolidated Film Laboratory, "Cooperation between the cinematographer and the laboratory technicians is desirable in any case, but it is absolutely vital in the case of the commercial laboratory There, the business element enters one man is the buyer, the other the seller, of a valuable service Without sincere cooperation on the part of both, this relation is often likely to prevent each from doing his best work, to give each a tendency to use this relation as an alibi It also tends to make both the laboratory man and the cameraman reluctant to discuss their mutual problems frankly and outspokenly

"Personal contact between the two is, therefore, doubly vital to the success of the production, so, too, is genuine mutual confidence To my mind, however, the most practical plan is what might be termed individualized standardization let the individual producer or cinematographer determine in advance just what laboratory treatment will be best suited to the production in hand Then the laboratory can consistently develop their negative to this predetermined gamma The inevitable result of this will be to the advantage of all concerned the cameraman will know exactly what to light, filter and expose for, the laboratory man will know exactly what to do, and be confident that the film will be photographed exactly for that treatment, and the producer will be rewarded with better and more consistent photography and processing"

JOHN ARNOLD, A.S.C., "From the viewpoint of the big studio, I feel that the most vital phase of the problem is having someone who understands both practical laboratory work and practical camerawork as a middle-man to supple-

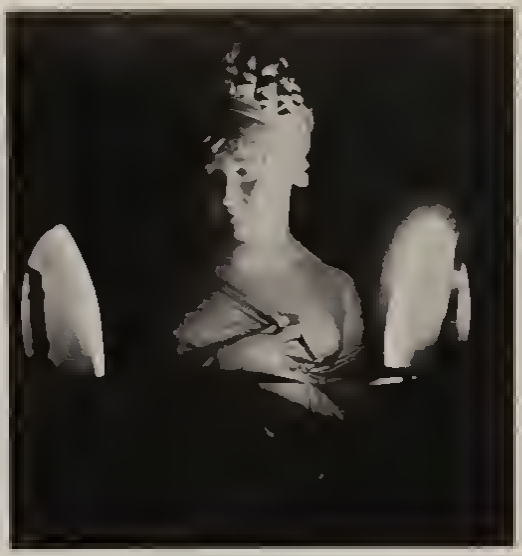
ment the always important personal contact between the individual cinematographer and the laboratory Someone who can not only study the dailies, and determine just who is at fault in the event of any difficulties, but who can go on the set and show the cinematographer—in terms he is accustomed to—just how he can remedy his troubles Having had practical experience in this myself, I realize that there is a vast difference between being told by the laboratory that my scenes are too flat, and being shown (on the set) how to rearrange or modify my lighting so as to give the laboratory a better break while yet getting the effects I am striving for Experience in many studios, and during many years has repeatedly proven the value of having such a man in an executive position in either the Camera Department or the Laboratory, or both, for such a liaison-officer between these two vital departments can save time, money, and tempers"

JOHN M. NICKOLAUS, Laboratory Head, Metro-Goldwyn-Mayer Studio.

"To my mind, the question can be reduced to a very few words forget all alibis—and make a conscious effort to help the other fellow It was not so very long ago when no laboratory man would ever admit that he could be wrong, or that any cinematographer was capable, and no cameraman would ever believe that the laboratory crew were better than murderers and incompetents Under such conditions, neither the photography nor the laboratory work could possibly be satisfactory Fortunately, times have changed now-a-days each of us has grown to realize that the other fellow is not only a human being, but a pretty good fellow and (since he is holding down a highly specialized and exacting position) a darn good workman In our own laboratory here at M-G-M and also, I am sure, in most of the others —whenever anything is not 100 percent satisfactory, it has become a fixed habit to first scrutinize our own work before saying anything about the other fellow's

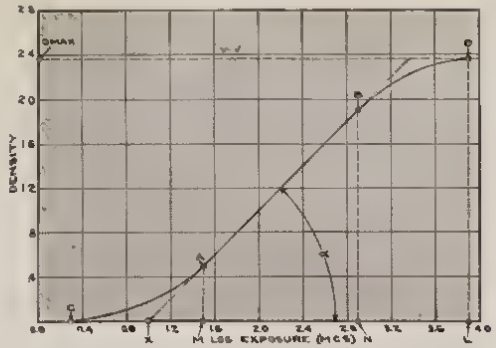
"In the old days, such a circumstance would have brought everyone in the laboratory into my office, vociferously damning the cameraman—and the cinematographer would quickly show up, complaining just as loudly about the lousy laboratory Today, the same people will troop into my office but the laboratory crew will be worrying for fear that they haven t done as well as they should with the cameraman's film—and the cameraman will be asking, "What did I do that made it hard for the lab men?"

"That is real progress But there is danger in it, for with each man striving to do his own work so well that it will help the other, and realizing that the other chap is an outstandingly good technician, we are as a rule so successful and so fortunate that there is a growing tendency to take each other's ability for granted Now, the best of cinematographers and the best of laboratories can't click 100 percent without each other's active help. I have found that inevitably the best and most consistent photography is that turned out by the first cameramen who make a fixed practice of dropping in at the laboratory in the evening before their dailies are developed, and talking it over with the negative man, and again in the morning, to make sure that the type of lighting, etc , that they have been using has been such as enables us to turn out a satisfactory print There have been other men—equally capable, sometimes even brilliant cinematographers—who feel so confident either in their own or the laboratory's capabilities that they never bother to come near the lab, these men, good as they are cannot always be lucky, for no amount of ability on either side can ever take the place of personal contact between the cameraman and the laboratory man sooner or later some unexpected light-effect or perhaps even an out-and-out mistake on the part of one or the other, will bring trouble



The bust as shown in the bottom photograph was set up in a totally dark room in the Kodak Research Laboratories, in front of a camera, faced by two electric irons. After an hour's exposure, the top photograph resulted—with the bust "illuminated" by heat from the irons The infra-red rays from the heated irons furnished the illumination

' On the whole, however, the relations of the cameramen and the laboratory are enormously improved, as is reflected by better photography and laboratory work, and by more efficient and economical production What is needed now is—as always—continued mutual confidence and continued (or, if possible, increased) personal contact between the man who exposes the film and the men who develop and print it"



The Difference Between Gamma and Contrast

by

Emery Huse, A.S.C.

Part 21 . . . of "Principles of Sensitometry and their Practical Application"

THERE has always been some confusion relative to the relationship which exists between gamma and contrast. In the last article gamma was completely defined as being the slope of the straight line portion of the H and D curve.

Referring again to Figure 19, Part 19 it will be readily observed that the straight line portion of the curve exists only between A and B and therefore if gamma is the slope of this straight line it can only refer to that portion of the curve or, in other words, it can only refer to the densities falling in that region of the curve, which densities were caused by the exposure values contained between points M and N.

It has been stated previously that there are three major portions to the H and D curve, the toe, or the region of under-exposure, which is contained between C and A, the straight line, the region of correct exposure between A and B, and the shoulder, or the region of over-exposure, which is contained between B and D. It must be remembered that the complete H and D curve covers a wide range of exposures and this range is appreciably greater than is necessary for the photographing of any object. To explain contrast we must consider density because contrast is a function which is observed by an examination of the densities contained in the photographic image. Therefore, for any photographic image the contrast is the difference existing between the maximum and minimum densities in that image. In considering contrast from the standpoint of the H and D curve it is necessary to determine on both the toe and the shoulder the point at which the gradient or slope is .20. It can be seen that in the toe the gradient is gradually increasing until it reaches the straight line in which part of the curve the gradient is constant. In the shoulder the gradient is a gradually decreasing function. By constructing tangents at various points along the toe and shoulder it is possible to locate that point in each where the gradient is .20. The density difference existing between these two points then gives a measure of the contrast. From figure 19, a .20 gradient on the toe would be slightly above point C, while a .20 gradient on the shoulder would be slightly below point D. Contrast, therefore, includes densities which are not part of the straight line portion of the curve, the slope of which is called gamma. Only in the case of sound recording negative can gamma and contrast be used synonymously, for in that type of work only the straight line portion of the H and D curve is used.

A Note on the Chemistry of Development

Ever since the introduction of the borax type developing formulas several years ago for the development of picture negative there has been in the practical field a lack of understanding as to the basic reason why this type of developer is productive of a very much finer grained result than the hitherto normal elon-hydroquinone-carbonate type. Misunderstanding has led to the general belief that the fine grain resulting from development in the borax formula was due to the borax, which after all is only the alkali or accelerator in the developer. The fact of the matter is that the sodium sulphite which is used in large quantities in the borax developer is the chemical which is doing the bulk of the work toward the production of fine grained results.

Sodium sulphite is a solvent for the silver bromide in the emulsion and forms a complex salt of silver bromide-sodium sulphite which is soluble in the developing solutions. This solvent action takes place as a side reaction during development and the silver complex is then slowly reduced to metallic silver which settles out on the walls of the developing tank and precipitates in the solution as a gray sludge.

It can be seen by comparing the standard borax formula with the elon-hydroquinone-carbonate type of developer that the amount of sulphite in the borax formula is much greater. Therefore, aside from the chemical aspect it becomes quite evident that the fine grained results are accomplished by the solvent action of the sodium sulphite. The borax is of no consideration in the production of fine grained results, it being simply a weak alkali and because of this fact the general borax type developer is slow acting.

It is interesting to note that current practice in the development of sound track negative of the variable density type makes use of a modified borax solution. It should be pointed out in this instance that the choice of the borax developer for this purpose is not to produce fine grained results but rather to make use of the slow acting borax developer with the recording negative films which are of positive, and therefore high, contrast characteristics. It is generally known, of course, that the graininess resulting from positive film is much less than that resulting from negative and the use, therefore, of the borax formula does very little toward making graininess less on this positive type of film.

HERE ARE 3 LANDMARKS

1... The first motion picture film ... invented by Eastman

2... The first *panchromatic* motion picture film ... invented by Eastman

3... The first *super-speed* panchromatic motion picture film ... invented by Eastman

All three of these inventions were vital factors in the progress of the motion picture art. The latest of them, Eastman Super-sensitive Panchromatic Negative, has virtually revolutionized motion picture procedure, and plays a stellar role in the finest productions of the day.

EASTMAN KODAK COMPANY

J. E. BRULATOUR, INC., DISTRIBUTORS

NEW YORK CHICAGO HOLLYWOOD

WHEELS OF INDUSTRY

● AN EMULSION Speed Table has been compiled by Hugo Meyer & Co for Dremoscope, Leicascope, Drem Cinemeters, and other exposure meters. This table gives the speed for eight different brands of film, manufactured both here and abroad. It is available free of charge for the asking by writing Hugo Meyer & Co., 245 W. 55th St., New York City.

This company is also distributing a new series of Drem Exposure Meters, which includes the Dremoscope for still photography, the Drem Cinemeter for Cine Work and the Leicascope for the Leica camera.

● THE MUCH discussed Megoflex critical focusers and viewfinders which were first displayed at the Leipzig Fair in March have been put on the market in America by Hugo Meyer & Company.

The Megoflex really makes a Reflex Camera out of the Leica, Contax and Peggy Cameras. They claim two distinct advantages for the users of these small cameras. First, the Megoflex lens focuses simultaneously with the two-inch camera lens, and secondly, the full picture size image is seen.

In principle it is a small camera (adjustable twin lens camera) of folding type. The lens, which is a high grade anastigmat, throws the picture on to a horizontal focusing screen, 24x36 mm. The lens is claimed to be of identical focus to that fitted to either the Peggy, Contax or Leica; Leitz Elmar 50 mm., Zeiss Tessar 50 mm. and Xenon 45 mm.

After both lenses are coupled the focusing movements are synchronized.

In addition to being able to focus at eye height and waist height, the folder describing the Megoflex demonstrates five other positions in which the camera can be held.

● THE NEW Vidom Universal View Finder for Leica Cameras is now available. It possesses several new features over the older model. The former model had the various fields of view as given by the various lenses engraved upon the lens of the finder, and because of this, the fields of all the Leica lenses could not be included, two models of finders being necessary to indicate the complete range of all the lenses.

The Vidom finder, however, includes the fields of all lenses. By means of an ingenious device, the field is masked by turning a knurled collar located on the outside of the finder. By simply turning the collar to the lens field wanted, the mask glides to the exact field as seen by that particular lens. This device is said to produce a clear, brilliant field.

Another feature of the Vidom is the correction for parallax. A tiny lever situated directly below the eye-piece of the finder can be moved to tilt the finder up or down so as to correspond with the exact field of the lens at any given distance.

● A NEW combination printer is announced this month by E. Leitz, Inc., 60 East 10th Street, New York City. This printer is said to accommodate all miniature camera sizes of negatives. It comes as a complete unit, incorporating its own illumination, which is controlled by means of an adjustable rheostat, spring-button light control, fixed ruby light for viewing the position of the negative in relation to the sensitive material, and various other features which make printing extremely simple and easy.

Aside from paper contact prints, this combination printer is said to accommodate miniature negatives from standard cinema film as made in cameras such as the LEICA MEMO, etc., printing them on positive film strips which can be used for film slide purposes, and negatives from miniature cameras producing the half-vest pocket size negatives (3x4cm), printing these on the popular 50x50 mm. square glass slides. It is claimed all types of miniature negatives can be printed on these glass slides.

● A TINY accessory which will be of interest to a great many LEICA camera owners is the new self-timer which has just recently been announced. It consists of a rather thin metal tube which is screwed onto the shutter-release button of the LEICA. In operation, it is extremely simple and efficient.

There are often times when the LEICA camera can be used at waist-level to good advantage. A reflecting view finder is offered which permits this with the utmost ease. The reflecting view finder is merely slipped into the grooved holder on top of the camera. By looking down into the finder, the exact area covered by the lens can be seen at a glance. This finder can also be used as an angle view finder, for it is supplied with a stud which permits it to be used on its side. This makes it usable when photographing an object at right angles to the direction the photographer is facing.

● A FILTER holder and sun shade has been announced by the Hollywood Camera Exchange, especially designed for the Leica camera.

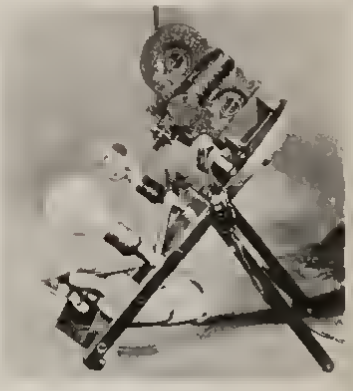
It is constructed in two parts with the filter placed in the center of the two pieces to firmly hold it in place. It is a light, small, neatly designed holder made of aluminum, machined to fit on the lens.

● FOR the making of movable-letter animated titles, the Bell & Howell Company has developed a new Character Title Writer for use with Filmo Cameras.

This new unit makes use of two 100 watt, 110-115 volt lamps that are silvered on one side, and so provide their own reflectors. Also, the lamps are of a more or less spherical form, which affords necessary ventilation around the filament to permit their use in the horizontal position which the lamps assume when the Title Writer is used vertically.

This new model can be used in a

Continued on Page 35



New Bell & Howell Title Writer

AMATEUR SECTION

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● CONTINUITY FOR THE AMATEUR an article that will interest every amateur motion picture maker, written by T E Hoffman, winner of the prize for the Ideal Home Movie in 1932

● THE TITLE Its Importance in this an amateur August Wolfram tells you right straight from the shoulder what he has discovered in his experience in making titles and placing them

● AERIAL PHOTOGRAPHY here another amateur shows you that he has dug deeply into an exciting phase of motion picture making Lieutenant R C Wriston of the Air Corp you ll admit he knows his clouds

● WHEN A PROFESSIONAL TURNS AMATEUR a member of the A S C makes a confession he tells you what he found out about the 16 MM camera he uses in his off moments No, it's not the story of the street car conductor who took a street car ride on his off day He makes interesting comparisons

● WE TEST 16 MM EQUIPMENT The results of the first tests of 16 mm equipment as made by the American Society of Cinematographers will be given you next month

● HERE S HOW in which members of the American Society of Cinematographers answer the questions of the amateur

Enlargements From 16 mm. Film

by

Hatto Tappenbeck, A.S.C.

IN considering methods of enlargements let us first admit that it is impossible to get anything in the reproduction that the original does not contain

In going through the experiments in endeavoring to find what would give the best enlargement from 16 mm reversal film, many different developing formulas were used many different grades and kinds of paper were also used

An effort was made to reduce grain to bring out everything that the original contained

At the right of this page you are given the reproduction of three different enlargements The two top illustrations are enlargements made from 16 mm film, while the bottom enlargement was made from an 8 mm film

These printed reproductions are not as pleasant to the eye as was the photographic enlargement from which they were made

Four different negative developers were used in this experiment. Borax, D-72, MQ-20 and Pyro Borax was found to give the best results

Without going into the many different papers used, let's settle quickly on the best and the reason this paper was decided upon

Because of the lack of detail in the usual enlargement of 16 mm. film, it was found that normal paper with a rough surface gave the most pleasant appearance Where detail was lacking on glossy paper, as for instance in the child at the left in the lower picture, this paper, because of its uneven surface, seemed to supply it The harshness around the eyes of the woman in the center picture was greatly softened with the use of this paper. Vitava Opal Z paper was finally settled upon as giving the most satisfactory results in this experiment.

Another important discovery was that an enlargement from the negative was more satisfactory than a direct print A 4 x 5 commercial ortho negative was made in each instance Commercial ortho was selected as it gives a wider latitude of control From this 4 x 5 negative the enlargements made ranged from slightly larger than this to 11x14's An analysis of the different sized enlargements conclusively demonstrated that these enlargements should never be smaller than 8 x 10 for 16 mm The reproduction of the 8 mm shown on this page was made from a 7 x 10 enlargement

The reproduction of the top picture of the girl holding the ball was really a fine piece of work In this instance it is evident from the engraver s reproduction that there was a lot more in the original 16 mm positive from which to work

The reason enlargements give the greatest satisfaction is that they apparently throw the grain out of focus causing it to be less noticeable in the finished picture. The main objection to the smaller reproduction has been that it gives

Continued on Page 34

Enlargements made by Mr Armstrong from 16 mm. Kodacolor film.

Kodacolor Experiences and Experiments

by

H. M. Armstrong

Kodacolor Amateur

IT is always nice to understand the technical foundations of any photographic process you may be using but it is not always essential The technical intricacies of the Kodacolor process, for instance, are very interesting, but you can make good color films even if you don't know how the color is obtained—and you can make bad ones even though you know just how and why everything in the process is as it is In my own case, for example, I made some of my best Kodacolor scenes long before I had any clear idea of how the color-effects were formed So I will not attempt any boresome explanation of the technical basis of Kodacolor Other writers, better qualified than I, have done that better, anyway—so why should I repeat?

Relatively speaking, I am rather an old-timer in Kodacolor, for I bought my Kodacolor outfit back in 1929—before I had even seen a Kodacolor film When I received the outfit it was the latter part of March—a time of year when the scenery of Maine is, with the exception of the pines, spruce and balsams, hardly very colorful But fortunately I live close to the seacoast, and a few minutes walk brought me to the rocky shore Here I was able to obtain pictures composed of the blue sky, the blue-green ocean and the mossy grey rocks with the foamy surf pounding in, and an occasional boat passing in the background In due time the roll came back from the processing-plant and I showed it to my expectant friends The pictures were far better than my expectations, for not only was the color wonderful, but at times the scenes showed a stereoscopic effect that I have often since admired—and tried to recapture. From that day to this I have been a confirmed Kodacolorist

As the seasons progressed to Apple Blossom Time I obtained more and more pictures. The apple-blossoms offer an ideal subject for the color enthusiast I remember one tree in particular: it looked to me like a girl with a new dress—beautiful, and proud of it Unfortunately when I discovered this tree I had already exposed all of the film I had at hand; but the next day I hurried out to obtain some pictures of this tree Alas, overnight the blossoms had dropped—and my picture was gone But next year I remembered, and came back for my picture!

One of the best of my earlier scenes was one of a white-blossomed cherry-tree dancing in the wind, with a waterfall tumbling in the background These two motions gave the impression of a revolving movement which I have since found to be one of the secrets of successful Kodacolor Color cinematography is not merely a matter of color-harmony, for although this is important, and should be carefully studied, one must also understand the harmony of rhythm and movement. The principal parts of the picture should not only be harmonious in color, but in movement as well

At another time, I made use of the blueness of a river I tried it in a scene with a girl in an orchid-colored dress in the foreground, with the river in the background, winding down across the meadow like a gleaming blue ribbon. For this, I had to know about the depth of focus With the camera set at infinity so that the background would be in focus, how close to the camera could the girl come—and still be in focus? Finally I began my long-shot, had the girl come in to position, then moved the camera closer, and continued In this I was helped by a story I had read some time previously, telling how in the case of a professional company on location, the director would make the players hold their exact positions while the cameras were moved up, and then start the action all over again—thereby avoiding the jumps that would otherwise occur The amateur can learn a great deal about the making of pictures from studying and reading about the work of his professional fellows

I think that every Kodacolor user should have a depth of focus table and study it in planning every scene It

Continued on Page 30

Wipe-Offs . . . How To Make Them

by

Frank B. Good, A.S.C.

WIPE-OFFS have been a part of the professional cinematographer's kit of tricks for many and many a year When he discovered this innovation he was more or less in the same position the amateur is in today so far as tools for this particular thing was concerned

He had to use his ingenuity and devise the methods used for this work Today his mechanical apparatus is not called into use so much, as many of these things are now done in the laboratory

Because of the method of handling reversal film it is practically impossible for the laboratory to put into the picture things the amateur has not put into them in his camera, so the matte box and sun shade with its myriad of possibilities becomes an important tool to that amateur who wants to dress his picture up a bit

The wipe-off is a fine effect for quick transitions It supplants the fade-out with the amateur who is now compelled to resort to the shutting down of his lens for this effect but it does not always come back as a fade-out from the laboratory because of the automatic method of handling the reversal film

As one of the judges of the Amateur Contest conducted by this magazine I saw many attempts at these wipe-offs It was evident some of them were made without the use of a matte box or sun-shade The amateur evidently drew his black card directly across the lens This method does not give a sharp, well-defined line, but is inclined to fuzz a bit It is necessary to get some distance from the lens to accomplish this effect properly. But in getting away from the lens it is necessary to have the light shaded completely from your lens so that when the wipe-off card closes the aperture, there is complete darkness If you attempted this without a sun-shade or matte box you would possibly get a reflection from the card and of course light would be surrounding your lens

Another vital thing is steadiness of movement By referring to Figure 1 in the accompanying illustrations you will note that the wipe-offs marked A are controlled by a lever This lever permits a steady, smooth, slow movement that cannot be accomplished by a direct hand action with the card itself

Let's take the single wipe-off Figure 4 shows a professional matte box as furnished by the Mitchell Camera Company and as it is mounted on one of their cameras this matte box, of course, is not available to the amateur furthermore it would prove too expensive for him We present it to give you an idea of a professional matte box However, in last month's issue, if you will refer to it, you will find in the photo of William Palmer and Ernest Page, the first prize winners of the contest, that their camera which stands between them contains a sun shade Accord-

Continued on Page 32

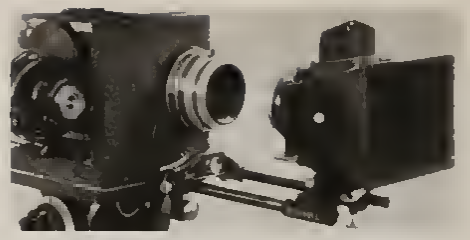

Fig 4

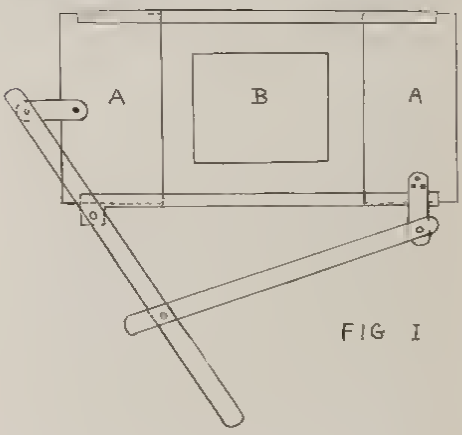

FIG I

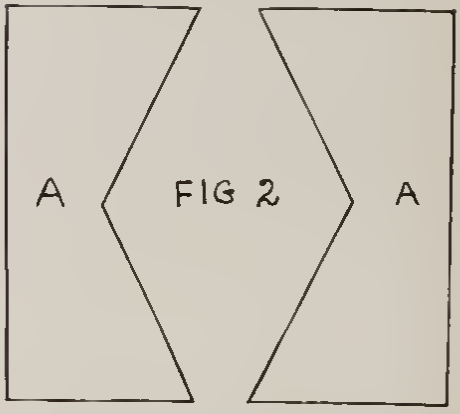

FIG 2

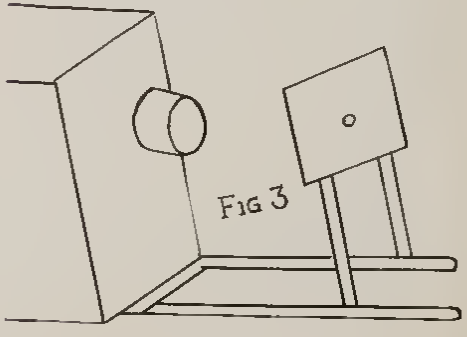

FIG 3

In the lower photo Mr. Childs is photographing a close-up of the hand with the cigarette. Upper photo demonstrates the value of the back-lighting in the finished product.

Lighting For Home Movies

by

S. W. Childs, Jr.,

Third Prize Winner
A.S.C. 1932 Competition

IN the early days of home movies, before the advent of fast lenses, panchromatic film, and efficient incandescent light units, about the only practical method open to the amateur for indoor sequences in his productions was an outdoor set. Bristol board sets on the tennis court, or open porches furnished to resemble a living room, pantry, or whatever it might be, were essential if one was to get sufficient light. I well remember the 'Silver Dollar Saloon' set which I built on our tennis court for one of my first productions, and the constant danger of showing the top of the set with tennis netting and trees in the background!

Fortunately, all is changed. I feel that the super-sensitive panchromatic film is the greatest boon to amateur movie makers since the introduction of 16 mm. cameras and projectors. Anyone can now take excellent indoor shots with very inexpensive equipment. However, lighting for home movies in general presents so many ramifications, that in this article I intend to confine myself entirely to the subject of lighting for closeups. Indoor closeups have an especial appeal to those of us confined to city apartments in the winter, when outdoor light is none of the best, and they should appeal to all amateurs, as closeups are coming to be regarded as more and more essential in any film. One can suggest, or create atmosphere, and lend continuity that is wanting when small details are overlooked.

My equipment consists of a camera, an F 1.5 lens and one Solite with a 500 watt bulb. One does not actually need a light of this wattage, but it is helpful in many ways, and you do know at least that you will have plenty of light for even the darkest corners. Furthermore, when using a light of this strength in taking closeups and placing it very close to your subject, you can stop down your lens aperture several points. This of course gives you greater depth of focus, and helps to overcome any errors of judgment of your distance. Very often I have been taking a scene only 18 inches away from the subject, and it was a comfort to know that I could stop down the lens to ensure the scene being in focus, whether I was 60 inches or 20 inches from the action.

Effective lighting is largely a matter of trial and error and individual ingenuity. I could not hope to give a list of suggested stops for the lens, or anything like that. The most that I can do is to suggest a few types of closeups and the manner in which I lighted them. Everyone has his own ideas on the subject.

One of the most effective shots is one that is back-lighted, and taken from an unusual angle at the same time. Angle shots should be used in conjunction with your lighting arrangements to get the most out of a scene. As can be seen from the illustration, the light cast by the Solite comes down from above and back of the subject, in this case a hand holding a smoking cigarette. It filters through the fingers, the underside of the hand being relieved by the reflection from the newspaper on the floor, and the smoke takes on added beauty, drifting upward against the light. Speaking of smoke, let me suggest that whenever you are dealing with something which is translucent, always backlight it if possible. Even so simple an operation as a hand chopping up ice in a tray with an ice-pick, is lovely and fascinating with the light coming through the ice and the shadows moving as the pick comes down. Water, of course, is most effective when light filters through it, be it in the bath tub, sink, or finger-bowl upon the table.

Backlighting brings out the glass as explained by Mr. Childs in this article.

It is a bit difficult to get many intriguing angles when photographing a foot or hand testing the tem-

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Mr Harvey and his home-made camera

I Made My Own 16 mm. Camera

by

Raymond Harvey,
Ameteur

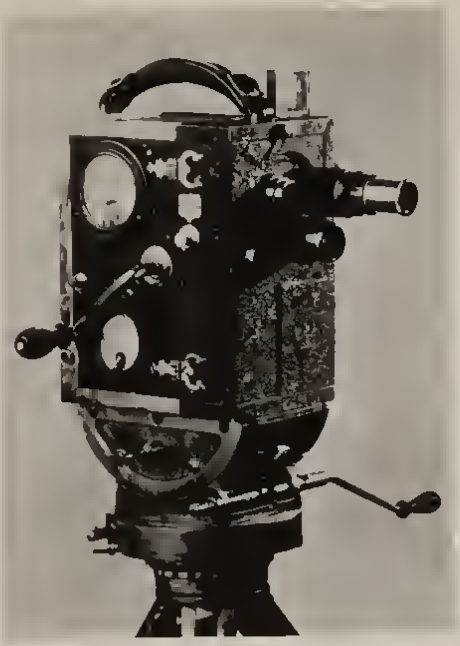
I HAVE always wanted a movie camera that was a step ahead of what the other fellow used Unfortunately, however, I've never been in a position to spend the many hundred dollars that the purchase of a commercial professional-type 16 mm camera would necessitate Perhaps I should have been satisfied, for I liked my Victor camera—I still like it, in fact, and I can get perfectly satisfactory pictures with it, but I wanted all kinds of professional refinements that have never been incorporated in even the best of commercially made "amateur movie cameras" So I decided to make my own camera—and to make it the camera of my dreams.

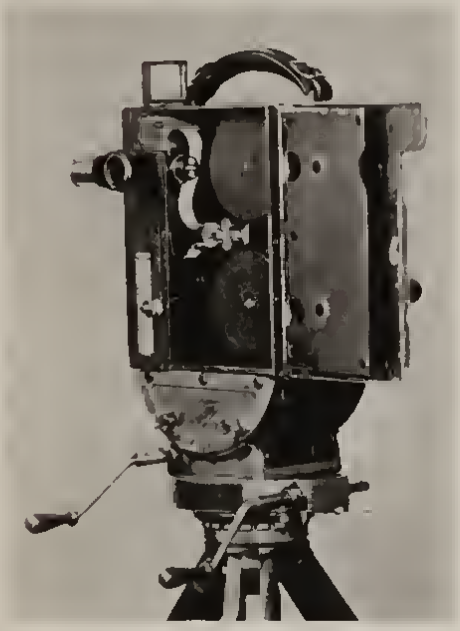
I wanted fades and lap-dissolves, of course—therefore it must be hand-cranked, and capable of running either backwards or forwards It must have a dissolver, or fade-out device I wanted to do trick and stop-motion work, so of course there must be a one-picture-per-turn movement as well as the usual eight-picture-per-turn I had learned that professional cinematographers get better quality by controlling the exposure with an adjustable shutter more frequently than by varying the lens-stop; therefore my camera must have an adjustable shutter I knew from experience that even the most accurately-calibrated focusing scales and finders cannot be 100 percent accurate under all conditions—so I knew that my camera must have means for focusing the whole frame on a ground-glass screen. Exposure is always the bugbear of the amateur, so why not build an exposure-meter right into the camera?

With these ideas in mind, I started to build my camera One of my friends had a home machine-shop, and allowed me to use it; luckily I had worked in it before, and understood something of precision machine-work Some of the parts I could assemble from stock parts of other cameras, and some I had to build myself or have made for me by those who were better equipped But my camera grew—slowly, since I had only my spare time to devote to the project—but steadily and satisfactorily. Naturally, as the design took concrete shape, I added a number of detailed conveniences, improvements and "gadgets," as they suggested themselves to me Now the outfit is complete, and has been in use for some time To my mind, it is very nearly perfect, and it has given me not merely the pleasure of owning a camera that will do all I ask of it, and that will take excellent pictures, but the joy of actually creating the design and building the equipment I am sure that neither Dr Victor nor Mr Howell have derived greater enjoyment or more lasting thrills from their work in evolving the designs that bear their names than I have in my modest attempts at making my ideal camera

As it stands today, the "Harvey Model I" is a box-form camera, finished in black crack-a-lac with chromium-plated trimmings It is a bit reminiscent, in appearance, of the old "Universal" 35 mm news camera, though vastly smaller and lighter It is equipped with a three lens turret with a special locking device Below the turret is a built-in compartment for the trick-crank and the mattes and other small accessories At the top of the case is, of course, the carrying handle, and a large direct viewfinder On the left-hand side is the magnifying eyepiece of the focusing system; an engraved chart which gives the exposure-time (in fractions of a second) for the different shutter-openings; the control-knob which automatically locks the movement so that I cannot move the film or turn the crank while focusing, and, on the door, a holder for small cards upon which one can keep notes of the scenes taken Inside the door are two metal pockets, each of which will hold a 100 ft. roll of film At the rear is the lever which controls the focusing mechanism, the dissolve-control, a Veeder footage counter, and a Starret spirit-level On the right-hand side are the crank-shafts, a frames-per-foot counter, and the two dials of the built-in photoelectric exposure-meter, with their controlling switches

The movement is of the claw type, partly home-made and partly assembled from standard parts Spindles are provided for the standard 100 ft daylight-loading rolls of film, and the camera will take up either backward or forward The focusing mechanism is arranged so that moving a lever at the rear of the case slides the whole movement sideways away from the aperture, and brings into place a ground-glass screen and a prism which reflects the image at right angles into the magnifying eyepiece Behind the aperture, when in focusing position, is a photoelectric cell which is connected to the indicating dial on the right-hand side of the camera The power-supply for this comes from some small flashlight batteries; in order to get a constant reading, uninfluenced by the waning or waxing strength of the bat-





ABOVE—Right-hand side of Harvey camera, showing turret, dials of built-in photoelectric exposure-meter, frame-counter and crank

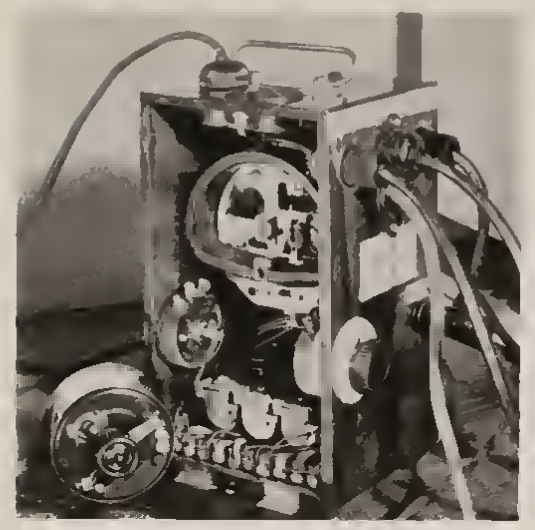
BELOW—Left-hand side of camera, opened to show movement, photo-cell of exposure-meter, focusing-magnifier, and film-pockets in door.

teries, I have provided a resistance so wired that the circuit can be adjusted to a standard voltage, at which all readings are taken Once this has been set, all that is necessary is to press the button which completes the photocell circuit, and then adjust your lens-opening so that the needle on the exposure-meter dial reaches a predetermined mark Unfortunately, my pocketbook has not as yet been equal to the procurement of a specially marked dial for this, but even so, it is simple enough to remember that a reading of, say 50 miliamperes, means perfect exposure

The shutter on this camera is adjustable to any opening between 5 and 170 degrees, to make this adjustment, the front door of the camera is opened, and the shutter adjusted by hand The dissolve is, of course, automatic, and, as yet, rather crude—though effective It is simply a metal disc with one segment cut out, and the remainder pierced by radial slots whose size and spacing grade progressively to the completely faded out position in which a solid segment is in front of the aperture. The fades produced by this mechanism are not, I will admit, as perfectly smooth and uniform as those made in professional cameras equipped with dissolving shutters, but they are satisfactory—and the design and construction of the fade-out mechanism are far simpler

Viewed in comparison with the fine design and construction of professional 35 mm cameras, my camera is perhaps very crude; yet I am proud of it, for it is the concrete expression of my own ideas in camera design and construction —a home-movie camera that is truly custom tailored to suit my needs When I started to make it, the task seemed almost too great and too exacting for either my ability or the equipment I had at hand But as the project progressed, I found that these very limitations made it doubly fascinating And although the camera itself is completed and working, I am still making detail improvements on it, as the need arises, and finding great pleasure in working out similar improvements on my Victor camera, not to mention several other ideas which may or may not pan out One of these is a full-frame focuser which I have incorporated into my Victor camera The ordinary magnifying focuser with which these and certain other 16 mm cameras are fitted is good, but it has always seemed to me to be only half the loaf, so to speak, for there are always times when one wants to focus not merely a tiny area in the center of his picture, but the entire picture itself After building my own camera, with its provision for full-aperture focusing, I decided to try to incorporate the same feature on my Victor Most of the engineers with whom I talked and corresponded assured me that it couldn't be done I wasn't so sure! Eventually, I struck what seemed to be a workable idea—on paper, at least, and back I went to the shop, hoping that it would work equally well in practice It did It consists of a square tube, chromium plated, and wedge-shaped at the end, which, through a lever on the outside, slides up into the aperture, automatically displacing the regular movement of the camera which I have altered to fold back, out of the way, and to snap into place afterward, without losing the loops The image is focused on a ground glass, and viewed through prisms and magnifiers much as in the regular focuser Designing and constructing these things has given me a world of pleasure So, whenever one of my fellow-amateurs asks me if the design and construction of a movie camera is too great a task for an individual, my reply is always an emphatic "NO!" It is often hard work, exacting, and bristling with perplexing problems and things that you'd like to do—and can't—but that is what makes it supremely enjoyable. If you doubt this—try it yourself!

A New Stop



Automatic control unit opened to show constructional details.

MOTION picture photography for educational and research purposes in medicine, biology, chemistry and all the natural sciences can be greatly aided by the use of a reliable and flexible stop motion device

The combination of these two factors, reliability and flexibility, into a compact and easily manipulated unit that can be used with 16 mm or 35 mm cameras of any make will greatly aid the usefulness of the motion picture, particularly in the research field Such an instrument, to have a universal application to all makes of spring driven cameras, must combine as many automatic operations as possible without alteration to the camera used It must be applicable to cinemicrography and yet be equally efficient for straight cinematography In other words it must be extremely flexible in the matter of control and application

With the many uses to which such an instrument can be applied and with the above criteria in mind, the writers have attempted to design such an instrument

The construction of a mechanism which will operate a spring driven camera to take single frames, presented several problems The camera to be used must be a standard make 16 mm or 35 mm spring driven machine and need not be equipped to take other than continuous pictures at either normal or one half normal speed It is extremely difficult to depress the starting lever by hand and release it quickly enough to insure that only one frame has been exposed, even at half speed This then was the first problem—to construct a mechanism that would AUTOMATICALLY operate to expose a single frame only when desired

The second problem was the control of the interval between frames Due to the wide variety of subjects for this work and the differences in their growth speeds, as well as the desired development speed when the film is projected, a very flexible timing unit is necessary It was thought from the start that this timing unit should be capable of stepless variations from the slowest to the fastest interval This requirement ruled out motors, synchronous clocks, etc, which would depend upon gears, shifts or changes of sprocket teeth, etc. to control the interval

The third problem was the control of light Since most of this kind of work extends over a period of several days, or at least over a period longer than would provide dependable natural lighting, artificial light must be used In the case of cinemicrography, the heat developed by the light, if it is permitted to play upon the slide continuously, unless adequately cooled will tend to dry a living preparation Then too, many microscopic subjects are phototropic and will not permit continuous application of strong light Still another angle which was of interest to the writers, was the unnecessary cost of operating lights of high wattage continuously when the actual time that the camera shutter is open is only a fraction of the total elapsed time It was thought very desirable to incorporate intermittent light control

The last requirement was that of extreme flexibility in operation It should be possible to modify or completely change the operation of the device between fast and slow automatic operation, manual operation and continuous filming in order to follow the vagaries of the subject being filmed Means must also be provided to turn on the lights continuously for observation when necessary

As finally worked out the system consists of four units, or rather one main timing unit and three auxiliaries The complete set up is shown in the photographs

The main unit is the timer and relay control box Connected with this is the camera trip device, the light circuits and the remote control panel Power supply in the machine shown is from the light socket and from a storage battery and a radio trickle charger for the battery's maintenance Since these photographs were taken the apparatus has been modified to operate entirely from the light socket

The cycle of operations is controlled by a timer constructed from the mechanism of a kilo-watt hour meter The meter was disassembled and a few turns of wire pulled in on top of the potential coil This coil was then connected to the current coil through a radio rheostat This procedure makes the meter self exciting and variation of the rheostat vary the speed at which the mechanism runs A five point sprocket was soldered to the second shaft of the meter and is permitted to close contact with a stationary contact spring When the mechanism is properly adjusted it will make and break the circuit once in each time interval This time interval is continuously variable from 7 seconds to two and one half minutes

Consideration of the operating conditions showed that the mechanism controlled by this circuit timer should be so designed that its cycle of operation would be independent of the interval between operations Tests showed that the mechanism must first: turn on the lighting system and permit it to come up to full brilliancy This is particularly true in the case of slow heating high wattage lamps, second depress the camera release lever; third release this lever quickly enough to prevent more than one frame from being exposed; fourth reset the mechanism in readiness for the next time interval

These various functions are controlled by a combination of one quick acting and two slow acting relays which provide the necessary lag between the various phases of the operating cycle This principle has proven quite simple and very reliable

Motion Device For Cinematography

by

Alan C. Woolley and George V. Morris,

Amateurs

The camera trip mechanism consists of a metal bed plate arranged to be fastened between the camera and the tripod or mounting board Pins covered with rubber tubing to protect the camera, serve to locate the camera accurately on this plate A side bracket carrying an electromagnet provided with an armature so designed that the attraction of the electromagnet will release the hand lever The normal spring of the camera hand release mechanism is enough to return this armature, provided it is not allowed to go down far enough to lock The plate holding these electromagnets does not require alterations to the camera for mounting and must be necessarily designed to fit each make of camera

The remote control panel is located at the end of a multi-wire cable and contains the control apparatus required to set the device in operation With this system of control it is possible to locate the timing unit out of the way and the remote control panel will not take up room

A four position switch is provided on this panel to choose between automatically timed single frames, manually tripped single frames, 3 frames per second or continuous filming An auxiliary switch is provided to turn either of these functions off or on after it is chosen A third switch is provided to independently control the lighting system, in order that the subject may be lighted continuously for inspection and adjustment without affecting the camera operation at its regular interval

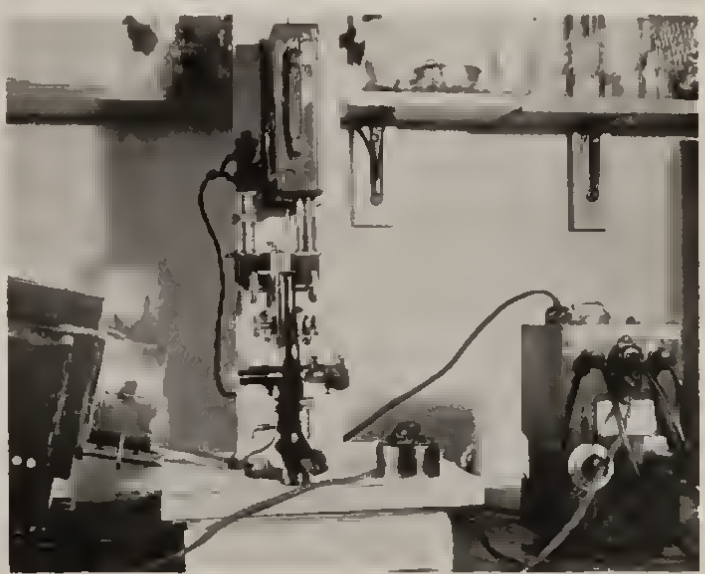
The instrument as now calibrated will give the following camera speeds

3 frames per second
8 frames per second (Half normal)
16 frames per second (Normal speed)
1 frame every 7 seconds
1 frame every 15 seconds
1 frame every 30 seconds
1 frame every 45 seconds
1 frame every 1 minute
1 frame every 1 minute 15 seconds
1 frame every 1 minute 30 seconds
1 frame every 1 minute 45 seconds
1 frame every 2 minutes
1 frame every 2 minutes 15 seconds
1 frame every 2 minutes 30 seconds

Any desired interval between those calibrated can be obtained by setting the pointer between calibrations, or by manual operation

This extreme flexibility, instantly changeable, is an advantage in filming certain slow growth changes wherein the rate of growth varies, or there are rest periods followed by rapid cell division or growth rates

Stop motion photography with its uncountable uses is of inestimable value in bacteriological, biological, botanical, entomological and chemical research Its possibilities in the educational and industrial fields are legion Those cinematographers and research men attempting this work will be repaid a thousand fold in knowledge that cannot be obtained or presented by other means



Complete time-lapse cinemicrographic equipment.

Left; Illuminant with liquid cooled objective.

Center; Binocular Microscope and Eastman Cine Kodak

Right; Delayed-action relay which automatically regulates camera lights and exposure intervals

HERE'S . . . HOW

by

Members of the A.S.C.

SO MANY inquiries regarding technical and other phases of motion picture making are addressed to this magazine and to the officers and members of the American Society of Cinematographers that we have decided to publish a few of the questions and their answers for the benefit of our readers. We invite our readers to make use of our pages as a medium for consulting the outstanding technicians of Hollywood on any cinematic problem.

NIGHT EFFECTS. "I understand that night-effect scenes can be made in daylight through the use of certain filters. How is this done?"—R.C.H., New York, N. Y.

Most professional cinematographers are constantly experimenting along this line, with special filters made to their own formulae. However, among the filters generally available, there are some which will, under the proper conditions, give passable night effects. The best of these is the 72 or "Gamma" filter. Used with SuperSensitive Panchromatic film, this filter will give very acceptable night effects. It must be noted that the night-effect is dependent upon a combination of over-correction and underexposure, the filter supplies the correction, and the exposure must be manipulated to suit the conditions of the moment, and to give the desired effect. As a general rule, the best results will follow the use of an aperture varying between f 3.5 and f 4.5, although with reversal film a somewhat greater degree of underexposure is sometimes desirable to offset the automatic correction of the developing machines. With regular Panchromatic film, a somewhat similar effect can be obtained by combining a 23-A filter and a 56-B filter. If these filters are not available, a heavy red filter (preferably a 29-F) will serve as a makeshift substitute. The use of SuperSensitive film and the 72 filter is by far preferable, however.

The conditions giving the best results for daytime night-effects are strong sunlight with long, pictorial shadows, and a bright blue sky mottled with white clouds. If one has artificial light available, the very best night effects can be made on overcast, cloudy days with the artificial lighting to illuminate the highlights and make the people stand out, this, however, is rarely possible for the amateur.

Undoubtedly the most convincing night scenes are those made on negative film and printed on blue-tinted stock, although, of course, reversal film can be tinted blue, too, if one has the equipment to do minor laboratory work. When using negative film, always be sure to inform the laboratory that you are making night-effects, lest they develop and print them for day scenes. It is also well in such instances to make a short test strip on the end of the roll, so that the laboratory can develop that first, and ascertain the proper treatment for the filtering and exposure you have used.

—Daniel B. Clark, A.S.C.

ADVERSE LICHTINC CONDITIONS. "I want to take movies in an Ice Skating Rink, and they must be taken at night, with only the regular illumination of the rink. The light is supplied by about fifteen 300 Watt bulbs in ordinary reflectors, placed rather high. My Filmo exposure-meter gives me a reading of f:1. My Camera has a 205 degree shutter, giving an exposure of 1/28 second, and an f:1.8 lens. I get perfect results at half-speed (8 frames per second), which makes an exposure of 1/14 second, I suppose; but this speeds up the action too much. The film, in any case, is of course SuperSensitive. What can I do to get more setisfactory pictures under these conditions; are there 16 mm. cameras with larger shutter-openings, lenses of greater speed, or faster film available"?

—H.C.J., Brooklyn.

It is not the policy of this magazine to specifically recommend any competitive products. However, one well-known camera has a shutter-opening of 216 degrees, giving an exposure of approximately 1/24 second. This alone is not sufficient to solve your problem, but an f.1.3 lens, which is twice as fast as your present f·1.8 objective, should do so, especially if used in conjunction with the 216 degree shutter. There are also two super-fast lenses available which would give you the desired increase in exposure, without any change of the camera or shutter, though at some sacrifice of perfect optical quality. The first of these (now discontinued, I understand, but undoubtedly still available through many dealers in new and used equipment) is the f 0.99 Dallmeyer. Still faster is the new Astro Tachone, f.0.95, which has just been placed on the market in Germany. According to the German press, this lens is unusually well corrected for so fast an objective, and is made in one, two, three and four-inch foci.

—William Stull, A.S.C.

CINEMATIC ARTISTRY. "I notice you speak about "Cinematic Artistry": will you please define it for me"?

—H.M.A., Cape Cottage, Maine.

Cinematic Artistry is a term descriptive of that type of artistry which is peculiar to the cinematographic medium. It signifies an artistic combination of photography, composition, lighting, chiaroscuro, etc., with the artistic uses of motion—both of the subjects and the camera itself—which is peculiarly the prerogative of the cinema.

—John Seitz, A.S.C.

SPLICINC POSITIVE TO REVERSAL. "I frequently have great difficulty when I try to spliee positive prints to reversal film: does the fault lie with the film, or my splicing technique"?

—H.C., Chicago, Ill.

Many amateurs make the mistake of being in too great a hurry when making splices. Under any circumstances, a second or two more drying-time will improve any splice, but it is vital for splicing positive and reversal films. The important things to consider when making such splices is to use a splicer that gives the largest area of contact between the two films, a really good cement—and plenty of time for the cement to dry.

—John Arnold, A.S.C.

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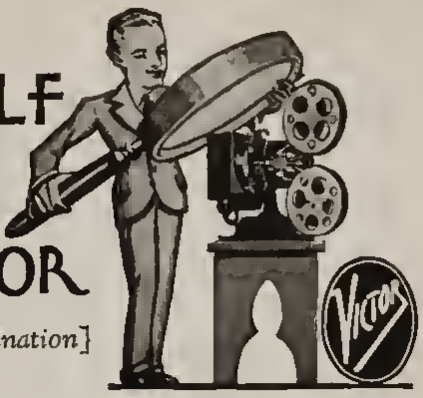

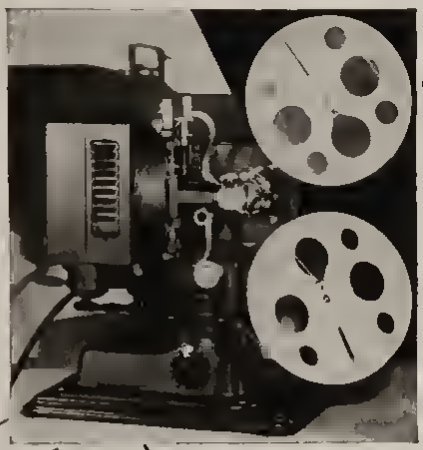

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Kodacolor Experiences and Experiments

Continued from Page 21

will give him the field of action for any focus-setting—the area in which everything will be sharp at that given focus-setting In Kodacolor, you are working at f 1 9—an opening at which the depth of focus is necessarily the least I have read that Kodacolor pictures should have sharply-focused backgrounds for the best results—and I have proved it time and again in practical work The use of a depth-of-focus table will make this easy If, for instance, I set my focus at 15 ft, the field of action would be from 11 ft to 22 ft Therefore, in this case I would have to have a garden wall or something of the sort in the background so that the scene would not extend beyond my 22 ft range of focus, I would not include anything important nearer the camera than 11 ft Everything in the picture would therefore be in focus To make sure of these distances, I use a depth of focus table and a tape-measure When it is not practical to use a tape, I use a distance-meter, but I prefer the tape

Visualization Necessary

Visualization is an important factor in getting good Kodacolor scenes Study how Kodacolor renders a given scene under different conditions, so that you can in time visualize beforehand just what any subject will photograph like under any condition—and so that you can, if necessary, make the conditions that will give you the picture that you want For instance: in taking a storm on the coast I have to have a clear day when a heavy surf is breaking over the shore, but if I use the full light that is available, I will have only a pretty surf picture—but nothing to suggest a storm So the thing to do is to cut down the light with a Neutral Density filter this will darken the scene for the storm effect, and still give a photographically good color picture

Capturing Sunsets

Sunsets are, of course, eternally interesting subjects for color pictures My first experiments with sunsets were made before I was at all sure whether or not I could capture them with Kodacolor I stood on top of a hill and waited for the sun to slip out of sight I kept watch of the sun, and found that I was able to look directly at it for a short time before it set, this set me to thinking if I could look directly at the sun then, why shouldn't I be able to make a picture of it! I tried it—and when the roll came back from the processing plant, I had my first sunset picture

One winter we had an ice storm here Trees, foliage, buildings, fences—everything was covered with a gleaming coat of ice Even the most prosaic objects were as beautiful as an imaginative artist's conception of fairyland I saw the ice on the trees giving off prismatic color as the branches swayed in the wind Could I photograph it? I went out and tried, pointing my lens as closely into the sun as I dared I lost about ten feet out of the fifty-foot roll through shooting too closely into the sun, but the rest of the pictures were beautiful The experiment was well worth-while for as the icicles swayed in the wind they gave off prismatic flashes of red which seemed at times to come from many different parts of the picture area on the screen

Atmospheric Difference

The difference in the atmosphere on the seacoast and inland is quite interesting I have taken pictures several hundred miles inland but the atmosphere seemed hazy after working in the clear sea air, and the pictures were not nearly so pleasing Here, the atmosphere is almost always clear—especially on days when there are cumulus clouds in the sky These days I call "Kodacolor Days" because they combine the best atmospheric conditions with beautiful clouds to work into my compositions

The introduction of Super-Sensitive Kodacolor film has been a great benefit to all of us When I was using the original Kodacolor film I used a No 1 Neutral Density filter on the scenes I made at the beaches, but no filter on the other scenes Now with Super-Sensitive Kodacolor I use the No 1 N D on all scenes where I had previously used none, and the No 2 Neutral Density filter where I had previously used the No 1

It is my opinion that pictures—especially Kodacolor pictures—should be clear, concise and pleasing to the eye with nothing to prevent the mind's grasping the subject or thought under consideration It has been said that poetry is thinking in pictures now that we can think in Kodacolor pictures we have the opportunity to turn our imagination into channels never before traversed

Music Problems

Continued from Page 11

different points of the proscenium This thought may be very impracticable, but I should like very much to see something done in this connection, as I feel sure that the proper musical accompaniment of pictures would greatly assist in improving the reaction of the audience I believe that you will all agree with me that up to the present a really effective background musical score has not been accomplished

Also, when a dramatic scene is on the screen and silence prevails for a few minutes, the issuance of music from the same source whence comes the dialog seems unnatural The producers always

try to create an apologia for the music, and either place a radio or a phonograph in the scene The audiences are becoming aware of this clumsy form of excuse, and are making many humorous comments about it

I mentioned before my sentiments regarding the size of our stages In the case of close-up recordings of solo instruments, they do not apply, but when an orchestra of symphonic proportions is employed we have found it well-nigh impossible to allow the men to play in full tone fortissimo, as they would in a concert hall On the radio we hear reproductions of symphony orchestras with a great deal of satisfaction as regards results Why can we not achieve as good results on our screen? The only remedy that I can think of is to utilize recording space so that it permits placing the microphones at a distance that would allow a natural performance and yet provide good acoustical results when reproduced The new developments recently made in extending the range of reproduced frequencies could then be fully appreciated

Duping Elementary

A word for duping This is one of the phases of our business that I think is still in its most elementary state An evil in itself and unavoidable from a practical and economic point of view—but the relation between the dynamics of music back of dialog plus effects is a matter of showmanship in its most elementary phase The dupers and mixers are endeavoring to be showmen in this sense, and in many instances they are The mere audibility of any sound, either music or effect, is not enough That the importance of the sound lies in the frame of the drama or the comedy is the factor to bear in mind A moment of drama must be recognized as such and soft and subtle treatment is necessary

Now I do not believe that all these shortcomings are due to inadequate equipment I attribute a great deal of it to faulty and inadequate acoustics From the standpoint of dialog, the motion picture is well exhibited; but from the standpoint of sound, I am sorry to reiterate that most of the comments of those who pay attention to this part of the entertainment are always most disappointing

In conclusion, I wish to state that complete cooperation and very close association must exist between the music department and the recording department

Prize Pictures Pull Record Crowd

Largest meeting of Chicago Cine Club is held when Prize Pictures are shown at gathering

● One of the largest attended meetings that the Chicago Cinema Club has had in some time was held at the Bell & Howell Auditorium on January 26 to view the prize winning pictures of the 1932 American Cinematographer Amateur motion picture competition.

While the Chicago club's meetings usually attract from 75 to 100 members this gathering brought out 175 who enthusiastically praised the entire program given them by Bell & Howell.

In addition to showing the prize production, Bell & Howell also explained and demonstrated some of their latest developments J G Llewellyn explained Filosound, touching on its applications in various fields

R F Mitchell told the assemblage something about the Varo lens and what it does In his talk he also projected some Varo lens shots to demonstrate his explanation

According to the report of Mr G. S Bowstead, president of the Chicago Cinema Club, this meeting was one of the most interesting the club has had in a long time. He especially emphasized the members' great interest in the prize productions and the hearty manner in which these pictures were received

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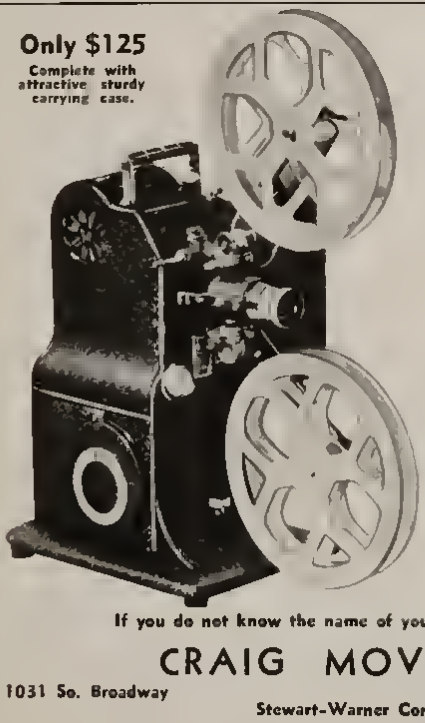

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Wipe-Offs . . How to Make Them

Continued from Page 22

ing to Palmer this was made hurriedly during the shooting of "Tarzan Jr" to enable them to make the wipe-offs which their picture contained It was constructed from a section of an old phonograph horn, a three inch filter holder and a ring stand clamp from a chemical laboratory The purpose of the set up was to hold the sliding mask at a respectable distance from the lens This also acted as a sun shade and according to Palmer they had no need to worry about lens flare even with extreme back or rim lighting The cost of them, of course, was nil, since all the component parts came from the junk heap For a starter many amateurs might want to make their own matte box so that they might experiment before going into a heavy investment Palmer's idea gives you a practical suggestion

Wiping Scene On

Assuming you have constructed the leverage principle as shown in Figure 1, but using the card on the left only for a single wipe-off which is the most popular you are ready for a number of interesting experiments The slow movement of the lever drawing card A at the left over B which represents the aperture you have wiped the scene off the screen To wipe the following scene on, you turn the entire apparatus upside down and of course the picture will start coming on from the left Very simple

We gave you the two cards on this Figure 1 sketch to show you what we commonly term "barn doors" This is a sort of wipe-off from both sides, giving you the impression of closing doors However, to work this accurately it is necessary that the distance from where the main lever is fastened onto the matte box to the point where it is attached to tab on card A, be the same as from the point on the matte box to the other lever This will compel both cards to travel at the same speed

Use of Designs

You can give this door shutting stunt variations by cutting designs in the cards as represented in Figure 2 There a simple design has been shown, but they can be as wide and varied as your imagination, consistent with good design

Some may want to go a few steps further with this wipe-off principle and attempt to make one scene chase the other off the screen as is so often seen in professional pictures This is rather difficult It calls for a great deal of accuracy and it calls for rewinding of the film You will have to keep accurate count from the time the wipe-off starts until it finishes You will then have to wind back to the start, reverse your wipe-off as explained previously for wiping-on As you wipe-on you will have to keep to the same pace at which you wiped off or the scene following will be separated from the scene going off by a black line of varied widths or it will overlap the scene being chased off the picture Possibly the safest experiment would be to try it with titles

We assume you have wiped the scene off preceding the title You now wind it back to the starting point of the wipe-off and then proceed to wipe on your title There is less danger with overlapping and slowness with titles than there is with scenes Your wipe-off gives an impression of black on the screen Your title back-ground is black, if it lags it will not be noticed, as both the wipe-off and the title background are black and of course there will be no evidence of lagging The following scene can also be wiped on in the same manner, however, you may want to use a quick wipe-off as you undoubtedly will jump right into some important action, as is usually the case following a title

Making an Iris

While Figure 3 does not represent a wipe-off, it is a simple little thing you can do that will give you pleasing results if you have the holder for the matte box It is an iris This is built of a black card —it must be dull black You make a hole in this card at the exact height of the lens the same size as the lens opening, so that when it is pushed up tightly against the lens it is large enough so it does not interfere with the lens housing or cut the picture down To iris out, you slowly push it away from the camera as you are taking the picture The farther the hole gets from the lens, of course the smaller your photographic field becomes until it almost disappears, when it reaches that point merely thrust your hand over the front of the lens and your iris out is complete Start the next scene for an iris-in with your hand over the lens and then slowly bring the board toward the lens until it fits up to it tightly when you again are permitting the camera lens to take in its entire field

Trying for Accuracy

In working both the wipe-off and iris where you want to get as close to accuracy as possible you might use what we term the count system You count slowly at an even pace from the time you start the action until you finish it You start the wipe-off or the iris counting 1-2-3-4, etc, slowly until you have completed Then when you wipe-in and iris-in again you count at the same pace, finishing with the number on which the previous action was completed

While you are not restricted to wiping-off from the left, but can do it from any angle as you frequently see in the professional picture, still it is the safest and most satisfactory to the viewer until you can use the principle of wiping it off

with another scene In view of the fact that the amateur camera does not permit of winding the film back and that it is not equipped with an exposure counter and the many other instruments the professional camera has, it might be much better not to try the angle chase-offs

Winding Film Back

If some wish to go to the expense of having their camera altered to wind backwards, we understand it is possible to have this done to some of the present day amateur cameras Then, of course, the double exposure is made more simple

The one case where the wipe-off from the top may be justified is when the title wipes the scene off This will prove more interesting to the viewer if done slowly, as it brings the lines of the title on the screen in their natural sequence By letting the following scene chase the title off, it also eliminates the lines of the title in their natural order

If you have a matte box—or have the ingenuity and mechanical ability to build one—try a few of these simple things . they'll give you a grand old kick

Consolidated Acquires Universal's Royal Laboratory

● Consolidated Film Industries, Inc , has closed a deal with Universal whereby Consolidated acquires Universal's Royal Laboratory This deal is stated to give Universal a slash in laboratory rates, and also take care of the repayment of the $600,000 remaining outstanding from the $1,000,000 loan made Universal by Consolidated three years ago

The Royal plant, according to Consolidated's statement, is to be shut down, although other reports deny this

Contracts for Comedy Cameramen

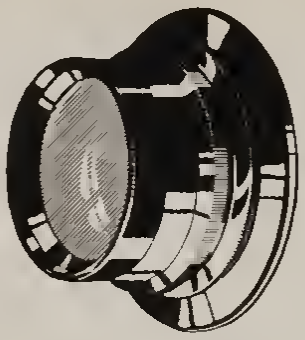
● Educational has handed term contracts to three of the staff of cameramen who have been photographing its short-subject program The three lucky men are Dwight Warren, Ed Tanner and Bernard Moore

Milton Krasner Becomes First Cinematographer

● Milton Krasner, long known as a second cinematographer for Charles Rogers Productions and at the Pathe Studio, has just completed his first production as a full-fledged first cinematographer The picture is "Strictly Personal," for Charles Rogers Productions Congratulations Milton! Keep it up!

Gregg Toland to Wed

● Gregg Toland, first cinematographer on Samuel Goldwyn's productions, "The Kid From Spain," "The Masquerader," etc , and Edna Callaghan, an actress, filmed a notice of intention to wed recently



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Lighting for Home Movies

Continued from Page 23

perature of the bath, or water running from a faucet over piled up dishes in the sink Quarters are generally fairly cramped, and, with the tub or sink in a fixed place, when you have moved in your light and camera tripod, there are not many positions from which to photograph It is different, however, when filming someone pouring liquid into a glass There you can not only have your light coming through both the glass and liquid, but you can take it from such an angle as to immediately stimulate the curiosity and enjoyment of your audience One of the most effective scenes I ever got, I think, was one where I photographed White Rock being poured into a highball glass Placing the glass on a low table, with the light coming from the side and back, but shielded from the lens by the body of the person pouring I sat on the floor, so that the lens was slightly below the level of the table The resultant foreshortening with the sparkling, bubbling water filling the glass, gave me a very interesting picture

Shooting Thru Glass

Here is a suggestion that may be helpful if you are filming someone shuffling cards at a card party, a most unexciting scene in itself Get a fairly large piece of glass I used the circular top of a glass topped table Rest this piece of glass on a couple of chairs, which will hold it so that, when you lie on your back on the floor, there will be at least two feet between the lens and the glass Place your light as close as possible to the one who is to shuffle, so that it will shine through the cards With the light flickering through the deftly shuffled cards, and filming directly below so that you can see the different cards as they fall into place, you will get a distinctly intriguing picture

Reflected Shots

The beauty of reflected shots should not be overlooked, and if your lights are properly placed, such a sequence will be very lovely You want to film a tea party, possibly as part of a production It all centers around the old silver tea kettle, standing proudly on the little stand which holds the burner Introduce the party taking a closeup of it, standing amidst the remaining paraphernalia, with the light coming from the side If filmed from a point somewhat below the level of the kettle, the distortion will vest it with its proper importance, while the reflection from the other silver pieces is beautiful indeed

Other culinary activities can be similarly enhanced If milady is serving a cold buffet supper, making the salad in an old wooden bowl, do not miss the chance to put your light on one side of the table while you stand on the other "Il faut le fatigue," and the light reflected from the gleaming leaves as the fork and spoon mix them with the dressing is lovely. Here you not only get the reflection from the oil on the leaves, but the light also shines through them, as the fork, spoon, or hands are partially silhouetted against the light This is particularly so when you film from a level with the salad bowl The importance of using only one strong incandescent for this type of work is apparent when photographing the rite of lifting the cover from the cheese dish at the buffet As the light comes only from one source, elongated shadows of the cheeses are cast on the dish, while the density of the darker side is sufficiently relieved by the natural reflection from the dish Plates do make wonderful reflectors One of the shots I like best in I'D BE DELIGHTED TO is one of a hand picking up a stalk of asparagus at dinner, I held the camera on a level with the table, while the light came from over the diner's shoulder, throwing the top of the hand into strong relief Yet the reflected light from the plate gave me all sorts of shadow contrasts, constantly changing as more or less light came through the fingers

It is impossible to enumerate all the possibilities for lighting in home movies, and I have tried only to suggest a few adaptations of that much used phrase "back-lighting" Avoid flat lighting as much as possible in closeups, for it gives you no contrast at all, and your own ingenuity will do the rest

◆

Enlargements From 16 MM Film

Continued from Page 20

a very grainy appearance which is lessened with the increasing of the size of the enlargement

Comparisons are sometimes unjustly made between the 16 mm enlargement from a duplicate negative made from a positive 16 mm. film with that secured from a small film original negative It must be born in mind that in making an enlargement starting with a positive print, no matter what its size might be, is never as good as an enlargement from an original negative

Suggestions were made to attempt enlargements by placing the 16 mm film between two pieces of photographic glass, first placing glycerine on each side of the film between the glass Also the suggestion that two pieces of photographic glass be separated by a small hose on three sides and water placed in between and the unexposed negative placed under it Both of these methods would act as diffusers and this undoubtedly could be done more easily and more quickly with a diffuser on the enlarging lens Diffusing, of course, would mean the loss of some detail, and the 16 mm, having so little detail to begin

with, it would hardly seem logical to attempt to eliminate more detail

Best Methods

The entire experiment led to the conclusion that the best method for enlarging 16 mm film was to make a negative of about 4 x 5 dimension to make an enlarged print from this of not less than 8 x 10 To make this print on a normal stock such as Vitava Opal Z with a rough finish, using Borax developer for the negative and Nepera for the positive

Contact prints proved unsatisfactory Glossy stock proved unsatisfactory to the eye as its grain intensified the lack of detail

Do not expect to get something in the enlargement that is not contained in the original If, however, you have a shot in a 16 mm. film that you feel is valuable to you from a sentimental standpoint and you want a picture that you would like to keep, something you would like to frame for your use, then the retoucher's art may help you But this experiment did not endeavor to take that into consideration It dealt only with the physical means at your command to secure satisfactory enlargements from 16 mm. film

Wheels of Industry

Continued from Page 18

horizontal position for filming ordinary titles There is also provision for the angle position for titles which show the hand as it writes

Jointed and swiveled lamp support arms by their flexibility make possible using glossy photographs and magazine illustrations for title backgrounds, as reflections are readily banished by proper placing of lights Lamp position flexibility also makes possible interesting shadow effects from third dimensional letters such as soup alphabets

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● G HAROLD Porter was recently appointed vice-president in charge of R C A -Victor Company's Hollywood offices He was formerly in charge of the Pacific Coast activities of the Radio Corporation of America

Frank B Good, A.S.C., Recoved From Flu

● Frank B Good, A S C , who was one of the victims of the prevalent influenza epidemic, is recovered It had him confined to his home for several weeks

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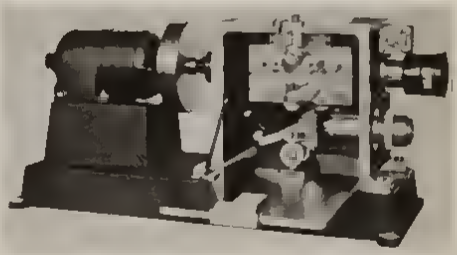

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? Here's How

A new feature starting this month in which members of the American Society of Cinematographers answers the amateurs' questions. Turn to Page 38. Ask your questions . . . they'll be answered by experts.

Photograph by M. F. Weaver

The Brulatour party given to the Sound Engineers of Hollywood at the Uplitters Club

Brulatour Host to Sound Men

Uplifters Club scene of gathering of more than 150 Hollywood studio sound engineers.

● While the party given by E O Blackburn of J E Brulatour, Inc , for the sound engineers of the Hollywood studios ushered out the month of January, in some of its aspects it had the color of a New Year's eve celebration

More than 150 sound engineers gathered at the Uplifters Club at the invitation of Blackburn on the evening of January 31 for one of the parties for which Blackburn is justly famous.

Nothing of a business nature entered into the evening's proceedings From 7 30 until "when" the gathering was furnished with entertainment that precluded everything of a business nature

Possibly the memorable highlight was the sound track which interrupted Blackburn's address and eliminated all speech making for the evening

This is the first time in the history of motion pictures that the Sound Engineers have gathered for a social event The enthusiasm of the occasion recorded it a tremendous success

◆

"Miscasting" The Cinematographer

Continued from Page 13

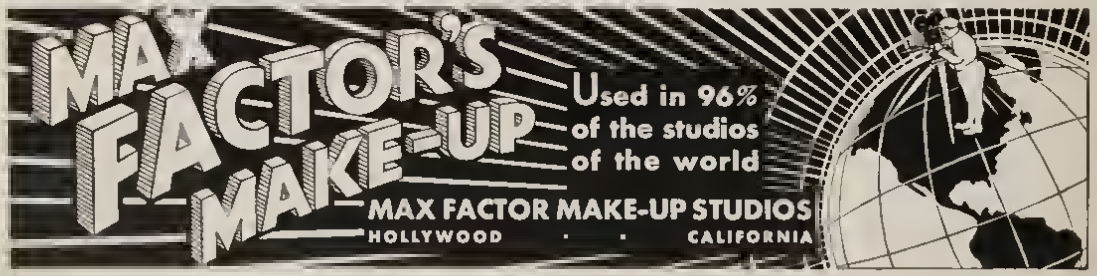
individual, but the human equation can never be safely ignored This has been repeatedly proven in the assignments of directors, writers and players, it means the difference between whole-hearted cooperation and apathetic, mechanical work.

It is a factor which has been recognized in the case of directors and other creative artists in production It has even been recognized in the case of certain specialized phases of cinematography A producer of outdoor or "Western" films, for instance, will not select his cinematographer at random, but will definitely assure himself of the services of one of a small group of specialists in that type of cinematography He would no sooner think of assigning a Karl Struss or a William Daniels to photograph such a film than he would of assigning a Mamoulian or a Lubitsch to direct it And this is not wholly predicated on the economic factor of salaries by any means The men who specialize in photographing outdoor pictures are masters of the difficult technique of making such pictures, they know more than merely photography they know how to choose locations, how to stage stunt action safely and effectively, how to get the maximum production value out of the minimum of physical equipment, and the thousand and one other intricate details of this work which the average cinematographer cannot expect to have at his fingertips Most important of all, they wholeheartedly enjoy their work, they have the instinctive feeling for this type of picture

Aside from this, in the general run of production in a big studio, the cinematographers are assigned largely on a basis of availability A man may finish one production today—a production of a type with which he feels completely at home Tomorrow, he may be assigned to a production for which he can arouse neither interest nor enthusiasm Three days later, another production of his type may start—with a man (hitherto unavailable) who would greatly prefer the other's assignment Similarly, a studio may have some outstanding cinematographer under contract, and available to keep him working, they assign him to a production which does not require a man of his specialized ability or technique He feels instinctively that he is virtually wasting his time on an inconsequential trifle Try as he may, he can seldom escape from 'soldiering'—"marking time"—"walking through" the production And the results on the screen will show it.

Enthusiastic Work

To this writer's mind, at least, a great deal of good would be done to both the producer and the industry as a whole if the studios would realize, when such productions are planned, that what might seem inconsequential productions to men whose work for years has been the photographing of the greatest specials, would seem very important and desirable to less prominent cinematographers, who—given such an assignment—would bend every



effort to distinguish themselves Such a policy would, first of all, result in better, fresher and more enthusiastic work on the part of these younger cinematographers; it would, I am sure, bring to light new talent, and improve the general standard of cinematography, and, secondarily, it would certainly aid in the alleviation of the camera profession's critical unemployment problem

Noiseless Camera

Continued from Page 9

They are, in fact, sometimes troublesome even with blimps With the new motor, however, the camera is so quiet that half the time I would not—except for the synchronization signals—know whether or not the camera was turning

"For the past thirty days, operations at the Metro-Goldwyn-Mayer studio have been standardized in using the 48-cycle motors on every company, regardless of the camera-equipment being used Contrary to some reports, the use of these motors does not involve any change in the sound equipment, as the present motors now in use with the recorders may be used in interlock with the new 48-cycle ones driving the cameras These motors, even with existing cameras, are a great improvement—and with the new camera they make a most welcome combination"

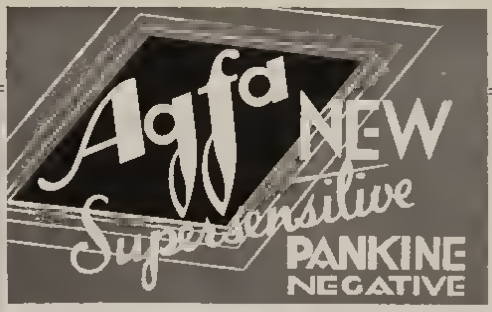
Features Not Sacrificed

The executives of the Mitchell Camera Company are very modest about their new product J D McCall, of the firm for instance, has told me, "We prefer to let the camera speak for itself, while we know that the camera is quiet, we do not advance it as the 100 percent noiseless camera which all of us hope to see some day We feel that it is, however, an appreciable advance over existing apparatus; it achieves a very satisfactory degree of silence in operation, without the sacrifice of any of the features of convenience, precision or durability for which the name Mitchell has always stood It is a camera designed expressly for sound-film use, and for the conditions confronting the industry today—conditions which require faster, more reliable operation than ever before It is, we hope, truly a camera for today—and tomorrow"

Dealer Holds Photographic Classes For Amateurs

● For those amateurs who wish to secure a good foundation in elementary photography, Tappenbeck & Culver, dealers at 10958 Weyburn Ave , Los Angeles, have started classes in their store which are conducted by Hatto Tappenbeck, A S C , one of the members of the firm

The entire course will consist of 12 lectures, each being held on Wednesday evening Amateurs are welcome up to the capacity of the quarters



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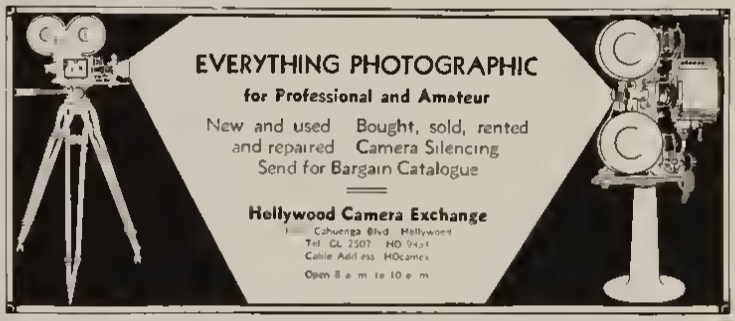
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